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MANUAL FOR USERS OF THE MONTANA INTEGRATED TRAFFIC RECORDS SYSTEM

ACCIDENT RECORDS SUBSYSTEM

(Revised Version)

Prepared
for
the
MONTANA HIGHWAY TRAFFIC SAFETY DIVISION
Helena, Montana

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Chapter 1

OBTAINING ACCIDENT INFORMATION

The ACCIDENT RECORDS SUBSYSTEM is one of the data files in the total data bank system known as the Montana Integrated Traffic Records System(MITRS). The information in the accident file is obtained from the records of motor vehicle accidents in the state of Montana submitted by law enforcement agencies at the state, county, and local level. The instrument prescribed by law for submitting these records is the Montana Investigator's Accident Report. (See Appendix A.)

When the accident report is received in Helena, it is key punched by personnel of the Montana Highway Patrol Bureau and submitted for storage in the Accident Records File.

Once in the data file, the information can be recalled to provide detailed information about specific accidents, or it can be used to produce statistical reports required at all levels of government. The Integrated Traffic Records System contains a number of programs for generating listings and various summaries of accidents.

It is the purpose of this manual to provide information to potential users of these accident data about (1) the items printed out in these listings and standard summaries, and (2) how to most efficiently request a particular kind of data.

It is not intended that a potential user feel restricted to the use of standard summaries or lists, and if your interest is in obtaining information which does not appear to be routinely available, you should contact the Montana Highway Traffic Safety Division in Helena and request assistance in obtaining any data which is needed.

The listings and summaries currently available are in MITRS because some agency had a use for them. Other reports will be developed as new uses are found for putting the stored data to work. You are encouraged to communicate your special needs, or problems you are trying to solve, to Highway Traffic Safety so that the maximum utilization of the Accident Record file may become a reality.

Of all the programs available in the MITRS Accident subsystem, there are thirteen that will be discussed in sufficient detail so that you should be able to identify the particular program that will provide the data that you are seeking to obtain, if in fact this program is in existence.

In addition to understanding what information will be printed out in a particular report, it is also essential that you ba able to restrict the data in the report to those roads or streets, or to the geographical area, or within those inclusive dates, or to those particular accidents which are actually of interest to you. For example, there is no point in printing out a set of data values for the entire state of Montana if you're only interested in the City of Glendive.

The options available to you will first be discussed and then in Chapter 2 each of the thirteen programs will be scrutinized, and those options which can be used to restrict the output of each program will be indicated.

Designating Roadway for Processing

It is possible to designate a system of routes, several routes in a system, a single route, or a portion of one route for processing. The optional parameters used are:

(a) DATA - this parameter can be used to select systems in the following ways:
    (1) the Federal Aid Interstate system
    (2) the Federal Aid Primary system
    (3) the Federal Aid Secondary system
    (4) the Federal Aid Urban system
    (5) the local system
    (6) All systems (1 through 5)
    (7) the Federal Aid system (1 through 4)
    (8) the Federal Aid Interstate plus Primary systems

Designating Roadway for Processing (cont'd)

(b) DATA + Route number

(1) to process a single route you may specify the system designation and its federal aid number. For example, specifying "INTERSTATE 90" would process all the accident reports for the full length of I 90.

(2) to process several routes in a given system you may specify the system designation and the inclusive federal aid numbers. For example, "SECONDARY 200 - 300" would process accident reports for all routes from S200 to S300.

(c) DATA + Route number + START-MILEPOINT + END-MILEPOINT

(1) to select only a portion of a route, you may specify the system designation, the federal aid route number, and the starting and/or ending milepoint. For example, "PRIMARY 2 from milepoint 105 to milepoint 154" would process all the accident reports for a forty-nine mile stretch of the designated highway (US 10) from Missoula to Drummond. (The milepoint is explained in Appendix B.)

Designating Geographical Areas

It is possible to designate specific areas of the state to be processed. The optional parameters available are:

(a) LOCATION which provides two possibilities:

(1) the entire state of Montana with only legally reportable accidents processed.

(2) the entire state of Montana with all recorded accidents processed.

(b) CITY where any city name from the list in TABLE I on page 4 may be specified and all recorded accidents from that city will be processed.

(c) COUNTY where any county name from the list in TABLE II on page 5 may be specified and all recorded accidents from that county will be processed.

If no geographical location is specified, the program assumes that you desire information for the entire state of Montana about all recorded accidents.

CITY CODE NUMBERS

CITY	CODE	CITY	CODE	CITY	CODE
Alberton	001	Flaxville	043	Opheim	085
Anaconda	002	Forsyth	044	Outlook	086
Bainville	003	Fort Benton	045	Philipsburg	087
Baker	004	Froid	046	Plains	088
Bearcreek	005	Fromberg	047	Plentywood	089
Belgrade	006	Geraldine	048	Plevna	090
Belt	007	Glasgow	049	Polson	091
Big Sandy	008	Glendive	050	Poplar	092
Big Timber	009	Grass Range	051	Red Lodge	093
Billings	010	Great Falls	052	Rexford	094
Boulder	011	Hamilton	053	Richey	095
Bozeman	012	Hardin	054	Ronan	096
Bridger	013	Harlem	055	Roundup	097
Broadus	014	Harlowton	056	Ryegate	098
Broadview	015	Havre	057	Saco	099
Brockton	016	Helena	058	St. Ignatius	100
Browning	017	Hingham	059	Scobey	101
Butte	018	Hobson	060	Shelby	102
Cascade	019	Hot Springs	061	Sheridan	103
Chester	020	Hysham	062	Sidney	104
Chinook	021	Ismay	063	Stanford	105
Choteau	022	Joliet	064	Stevensville	106
Circle	023	Jordan	065	Sunburst	107
Clyde Park	024	Judith Gap	066	Superior	108
Columbia Falls	025	Kalispell	067	Terry	109
Columbus	026	Kevin	068	Thompson Falls	110
Conrad	027	Laurel	069	Three Forks	111
Culbertson	028	Lavina	070	Townsend	112
Cut Bank	029	Lewistown	071	Troy	113
Darby	030	Libby	072	Twin Bridges	114
Deer Lodge	031	Lima	073	Valier	115
Denton	032	Livingston	074	Virginia City	116
Dillon	033	Lodge Grass	075	Walkerville	117
Dodson	034	Malta	076	Westby	118
Drummond	035	Manhattan	077	West Yellowstone	119
Dutton	036	Medicine Lake	078	Whitefish	120
East Helena	037	Melstone	079	Whitehall	121
Ekalaka	038	Miles City	080	White Sulphur Springs	122
Ennis	039	Missoula	081	Wibaux	123
Eureka	040	Moore	082	Winifred	124
Fairfield	041	Nashua	083	Winnett	125
Fairview	042	Neihart	084	Wolf Point	126

TABLE I

COUNTY CODE NUMBERS*

COUNTY	COUNTY CODE	COUNTY	COUNTY CODE
Beaverhead	18	Madison	25
Big Horn	22	Meagher	47
Blaine	24	Mineral	54
Broadwater	43	Missoula	04
Carbon	10	Musselshell	23
Carter	42	Park	49
Cascade	02	Petroleum	55
Chouteau	19	Phillips	11
Custer	14	Pondera	26
Daniels	37	Powder River	09
Dawson	16	Powell	28
Deer Lodge	30	Prairie	45
Fallon	39	Ravalli	13
Fergus	08	Richland	27
Flathead	07	Roosevelt	17
Gallatin	06	Rosebud	29
Garfield	50	Sanders	35
Glacier	38	Sheridan	34
Golden Valley	53	Silver Bow	01
Granite	46	Stillwater	32
Hill	12	Sweet Grass	40
Jefferson	51	Teton	31
Judith Basin	36	Toole	21
Lake	15	Treasure	33
Lewis & Clark	05	Valley	20
Liberty	48	Wheatland	44
Lincoln	56	Wibaux	52
McCone	41	Yellowstone	03

* To use these numbers to specify a County Sheriff's Department, prefix the two digits by a letter 'C';

Lake County Sheriff = C 15

TABLE II

Designating a Time Period

START-DATE and END-DATE - it is possible to designate a particular time period for processing accidents by using this parameter. To exercise this option, simply specify the beginning and ending dates you desire. For example, specifying a starting date of January 1, 1972 and an ending date of December 31, 1972, would process all reports which had been recorded in calendar 1972. Another example, if you specify a starting date of March 1, 1973 and an ending date of March 31, 1973, all reports for the month of March 1973 would be processed. If you specify only a starting date, all reports from that date to the present date would be processed. If you specify only an ending date, all reports from the beginning of the file history to that date would be processed.

If neither a starting date nor an ending date is specified, the program assumes that you desire information for all accidents recorded in the entire file history to date.

Designating Certain Accidents by Number

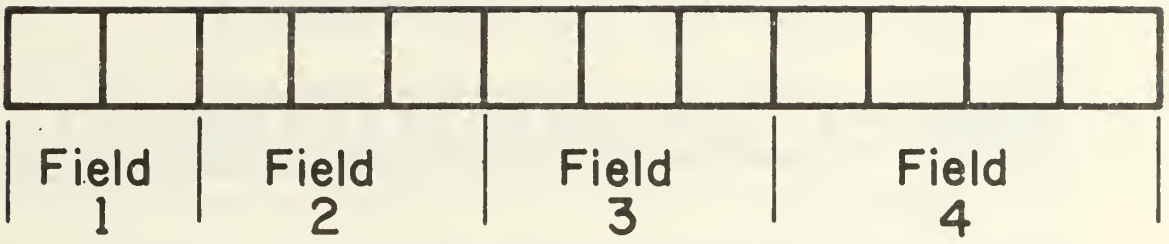
It is possible to designate only certain chosen accidents to be processed by using START-ACCIDENT and END-ACCIDENT.

This means that starting and ending accident numbers may be specified, and permits accidents to be selected on the basis of accident number. If starting and ending accident numbers are specified, only accidents having a number equal to or greater than the starting number and equal to or less than the ending number are included in the processing.

If neither is specified, no selection based on accident number will be performed.

To understand the interesting possibilities that this latter option affords, one needs to be aware of the make-up of the accident number. The accident number is a twelve digit number constructed as shown in Figure 1 on page 7.

Samples 1 and 2 on page 8 provide examples of the use of this optional parameter.



Field 1 – Last two digits of the year of the accident occurance.

Field 2 – Identification number of the investigating agency, Montana Highway Patrol = OOO, County Sheriff Department = C+ County Code (See TABLE II, page 5), City Police Department = City Code (See TABLE I, page 4).

Field 3 – Investigating officer's identification number.

Field 4 – Unique number identifying this particular accident event within the investigating agency.

Figure 1. *The Accident Number*

To process all the accidents reported by officer with badge number 356 in Great Falls during 1972:

(City Code = 052, TABLE I)

Starting Accident Number → 7 2 0 5 2 3 5 6 0 0 0 0

Ending Accident Number → 7 2 0 5 2 3 5 6 9 9 9 9

Sample 1

To process all accidents investigated by officers of the Missoula County Sheriff's Department during 1973:

(County Sheriff Code = C04, TABLE II)

Starting Accident Number → 7 3 C 0 4 0 0 0 0 0 0 0

Ending Accident Number → 7 3 C 0 4 9 9 9 9 9 9 9

Sample 2

Designating Certain Criterion for Selecting Accidents to be Processed

It is possible to designate the accidents to be processed in some programs by data elements or sets of data elements stored within the accident files.

This is known as a SELECT statement. Due to the large number of selection options available, it is impractical to attempt to specify individual criterion directly. A partial list of data elements upon which selection can be made are shown in List 1 on page 10.

For example, it would be possible to request that a particular program only process those accidents in the city of Lewistown in which the first harmful event was a collision with a pedestrian that occurred between the hours of 7 AM and 6 PM.

Another example, it would be possible to request that a summary include only those accidents for Flathead County on US 93 in which the road condition was stated as icy and that the investigating officer had listed "road slippery or icy" as a contributing circumstance in the accident.

The discussion of the thirteen standard types of list or report available to users of the data stored in the Accident subsystem files, will refer back to these explanations of the use of the optional parameters for limiting the report output to the information actually desired, and they should assist use of the programs by anyone seeking to obtain data.

It should again be stressed that prospective users are encouraged to call upon the Highway Traffic Safety Division personnel to help solve any problem that arises in the acquistion of accident data.

ACCIDENT NUMBER
INVESTIGATING AGENCY
OFFICER'S BADGE NUMBER
LOCATION
TYPE OF ROAD SYSTEM
ROUTE NUMBER
MONTH OF ACCIDENT
DAY OF ACCIDENT
YEAR OF ACCIDENT
HOUR OF ACCIDENT
MINUTE OF ACCIDENT
FIRST HARMFUL EVENT
FIRST OBJECT HIT
INJURY SEVERITY
DAMAGE SEVERITY
CLASS OF TRAFFICWAY
ROADWAY RELATED LOCATION
JUNCTION RELATED LOCATION
WEATHER CONDITION
ROAD SURFACE CONDITION
LIGHT CONDITION
TYPE OF COLLISION
TRAFFIC CONTROLS
STATE OF DRIVERS LICENSE
STATE OF VEHICLE REGISTRATION
SEX OF DRIVER
CONTRIBUTING CIRCUMSTANCES
AGE OF DRIVER
POSSIBLE VIOLATIONS
VIOLOATION CHARGE CODE

LIST 1 Partial List of SELECT data elements

Chapter 2
STANDARD OUTPUTS

In the material which follows, we will present information relating to the thirteen outputs that we feel would be of major interest to users of the MITRS Accident subsystem. Each program will be discussed in the light of the printed data it provides, the required parameters that you must specify, the optional parameters you may want to specify, and a typical sample request you might want to submit for processing. Again we want to put emphasis on the fact that providing needed information is the real name of the game, and that the thirteen outputs we discuss in no way restrict other kinds of information output that you might need.

LIST

(a) Description - this program permits you to secure a listing of data elements from a single accident or selected accidents. You may obtain a single accident in all its details or as an abbreviated list as shown is List 2 on page 12. The complete list (formatted) requires approximately one print-out page per accident. An example of the output is shown in Figure 2 on page 13. The numbers following listed items refer to coded information, the explanation for which is available in the worksheet which accompanies the Montana Investigator's Accident Report. (See Appendix A)

In essence this permits a user to retrieve from the accident data file all the information that was supplied by the investigating officer about the accident event except the sketch of the accident diagram and the word description which accompanied the sketch. The coded information would at first appear to be rather awkward to handle from the standpoint of interpretation of the accident conditions, but it is assumed that a user would either be familiar with the coding format or that an explanation of the symbols would be readily and conveniently available to him through a worksheet that is a part of each set of the Montana Investigator's Accident Report.

ACCIDENT NUMBER

CITY

COUNTY

DATE

TIME

LOCATION

LIST 2 Abbreviated Output of Accident Information From Program LIST

74000256C801 08/03/74 19:05 000 56 P001027+0400

***** ACCIDENT DETAILS *****

FIRST HARMFUL EVENT.....	4	DAY OF WEEK.....	SATURDAY	LEGALLY REPORTABLE.....	YES
FIRST OBJECT HIT.....	24	NUMBER OF VEHICLES.....	2	INVESTIGATED.....	YES
INJURY SEVERITY.....	1	NUMBER OF PEDESTRIANS.....	0	ENGINEERING STUDY.....	NO
DAMAGE SEVERITY.....	1	NUMBER OF FATALITIES.....	2	OTHER DAMAGE -- TYPE.....	0
CLASS OF TRAFFICWAY.....	3	NUMBER OF INJURIES.....	2	OTHER DAMAGE -- SEVERITY...	0
ROADWAY-RELATED LOCATION...	1	ANALYSIS -- FIELD 1.....	0	OTHER DAMAGE -- OWNER.....	0
JUNCTION-RELATED LOCATION..	0	ANALYSIS -- FIELD 2.....	0	DATE NOTIFIED.....	8/03/74
WEATHER CONDITION.....	1	COLLISION TYPE.....	1	TIME NOTIFIED.....	19:11
ROAD CONDITION.....	1	TRAFFIC CONTROLS.....	14	DATE ARRIVED.....	8/03/74
LIGHT CONDITION.....	1	POSTED SPEED LIMIT.....	55	TIME ARRIVED.....	19:21

***** VEHICLE NUMBER 01 *****

STATE OF DRIVER LICENSE....	MT	CHARGE CODE.....	000000	RE-EXAMINATION RECOMMENDED.....	NO
VISION OBSTRUCTIONS.....	0	INTENT.....	1	INVOLVED IN INTERSTATE TRAFFIC.....	NO
PHYSICAL DEFECTS.....	0	BODY STYLE.....	5	VEHICLE YEAR.....	74
POSSIBLE VIOLATION.....	1	TRAILER STYLE.....	0	VEHICLE LICENSE.....	0000F26YKU48149
ROAD DEFECTS.....	0			DAMAGE SEVERITY.....	1
MECHANICAL DEFECTS.....	0			DAMAGE LEVEL.....	OVER $250

	ALCOHOL	AGE	SEX	INJURY
DRIVER	1	25	M	3
FRONT CENTER	0	00		0
FRONT RIGHT	0	00		0
REAR LEFT	0	00		0
REAR CENTER	0	00		0
REAR RIGHT	0	00		0

***** VEHICLE NUMBER 02 *****

STATE OF DRIVER LICENSE....	MT	CHARGE CODE.....	000000	RE-EXAMINATION RECOMMENDED.....	NO
VISION OBSTRUCTIONS.....	0	INTENT.....	1	INVOLVED IN INTERSTATE TRAFFIC.....	NO
PHYSICAL DEFECTS.....	0	BODY STYLE.....	1	VEHICLE YEAR.....	64
POSSIBLE VIOLATION.....	9	TRAILER STYLE.....	0	VEHICLE LICENSE.....	56-8077MT73
ROAD DEFECTS.....	0			DAMAGE SEVERITY.....	1
MECHANICAL DEFECTS.....	0			DAMAGE LEVEL.....	OVER $250

	ALCOHOL	AGE	SEX	INJURY
DRIVER	0	22	F	2
FRONT CENTER	0	00		0
FRONT RIGHT	0	02	M	1
REAR LEFT	0	00		0
REAR CENTER	0	01	M	1
REAR RIGHT	0	00		0

Figure 2 LIST Output

LIST (cont'd)

(b) Required parameters - none

(c) Optional parameters - there are six listed below.

(1) LIST - you should specify whether you desire the abbreviated or the formatted (complete) listing. If this option is not specified, the program assumes the abbreviated list is to be provided.

(2) DATA, START-MILEPOINT, END-MILEPOINT (see page 2, 3). If this option is not specified, no processing will be performed on a system or route basis.

(3) LOCATION, CITY, COUNTY (see page 3). If this option is not specified, the program will assume all recorded accidents for the entire state of Montana are to be processed.

(4) START-DATE, END-DATE (see page 6). If this option is not specified, the program will assume all recorded accidents for total file history are to be processed.

(5) START-ACCIDENT, END-ACCIDENT (see page 6, 7). If this option is not specified, no selection based on accident number is performed.

(6) SELECT (see page 9). Stipulate special restrictions you would like to impose on the accident records processed.

(d) In Sample 3 on page 15, we see an example of a typical request which a user might send to the Montana Highway Traffic Safety Division.

This request would provide complete information about a particular accident stored in the accident file. The accident for which information is being sought was reported by a Hardin Police Officer with badge number 12 during August 1974.

LIST (cont'd)

(7) START-STREET, END-STREET - These parameters can be used to select accidents for a segment of a street. If option (6) above has been specified, this parameter permits the user to list only those accidents along a stretch of the designated street over a length indicated by a beginning and an ending intersection. Using the Route location number listing mentioned in option (6), choose the four digit number which designates the intersecting street where you wish the stretch to begin for START-STREET, and then choose the four digit number which designates the intersecting street where you wish the stretch to end for END-STREET.

(8) ACCIDENTS - This parameter can be used to cause a list of: a. ALL (accidents listed without regard to intersection relatedness); b. INTERSECTION (accidents listed only when they occurred at intersections); c. NON-INTERSECTION (accidents listed only when they did not occur at intersections).

(9) SELECT (see page 9) - Stipulate special restrictions you would like to impose on the accident records processed.

(d) In Sample 3 on page 15, we see an example of a typical request which a user might send to the Montana Highway Traffic Safety Division.

This request would provide complete information about a particular accident stored in the accident file. The accident for which information is being sought was reported by a Hardin Police officer with badge number 12 during August 1974.

(e) In Sample 3a on page 15.1 we see an example of a request for information from Badgercreek, Montana for a list of the accidents that occurred during nine months of 1977 in that city. The list of accidents is only to include those between 4th and 7th Street on Second Avenue S.

REQUEST FOR HIS ACCIDENT INFORMATION

TO: *Montana Highway Traffic Safety Division*
Capitol Station
Helena, Montana 59601

FROM: *Chief of Police*
Hardin, Montana 59034

PROGRAM: *LIST with formatted output*

REQUIRED PARAMETERS: *none*

OPTIONAL PARAMETERS:

(a) DATA: *none*
START-MILEPOINT: *none*
END-MILEPOINT: *none*

(b) LOCATION: *none*
CITY: *Hardin, Montana*
COUNTY: *none*

(c) START-DATE: *August 1, 1974*
END-DATE: *August 31, 1974*

(d) START-ACCIDENT: *740540120808*
END-ACCIDENT: *740540120808*

(e) SPECIAL SELECT CONDITIONS: *none*

Sample 3

REQUEST FOR HIS ACCIDENT INFORMATION

TO: *Montana Highway Traffic Safety Division*
Capitol Station
Helena, MT. 59601

FROM: *Chief of Police*
Badgercreek, MT.

PROGRAM: *LIST*

REQUIRED PARAMETERS: *none*

OPTIONAL PARAMETERS:

(a) **DATA:** *none*
START-MILEPOINT: *none*
END-MILEPOINT: *none*

(b) **LOCATION:** *none*
CITY: *Badgercreek, MT.*
COUNTY: *none*

(c) **START-DATE:** *April 1, 1977*
END-DATE: *December 31, 1977*

(d) **START-ACCIDENT:** *none*
END-ACCIDENT: *none*

(e) **STREET:** *Second Avenue S. 0004*

(f) **START-STREET:** *4th Street 0010*
END-STREET: *7th Street 0013*

(g) **ACCIDENTS:** *All*

(h) **SPECIAL SELECT CONDITIONS:** *none*

Sample 3a

COUNT-ACCIDENTS

(a) Description - this is a summary report which will print out five items. They are (1) the total number of accidents, (2) the number of accidents in which the most serious event was an injury, (3) the number of accidents in which fatalities occurred, (4) the total number of persons injured, and (5) the total number of fatalities. A sample of the output is shown in Figure 3 on page 17.

(b) Required parameters - none.

(c) Optional parameters - there are five listed below.

(1) DATA, START-MILEPOINT, END-MILEPOINT (see page 2, 3) If this option is not specified, no processing will be performed on a system or route basis.

(2) LOCATION, CITY, COUNTY (see page 3). If this option is not specified, the program will assume all recorded accidents for the entire state of Montana are to be processed.

(3) START-DATE, END-DATE (see page 6). If this option is not specified, the program will assume all recorded accidents for total file history are to be processed.

(4) START-ACCIDENT, END-ACCIDENT (see page 6, 7). If this option is not specified, no selection based on accident number is performed.

(5) SELECT (see page 9). Stipulate special restrictions you would like to impose on the accident records processed.

(d) In Sample 4 on page 18, we see an example of a typical request which a user might send to the Montana Highway Traffic Safety Division.

This request would provide a tabulation of accidents recorded in Park County for the first quarter of 1975.

HIS ACCIDENT SUMMARY TOTALS

NUMBER OF ACCIDENTS	1565
NUMBER OF FATAL ACCIDENTS	30
NUMBER O F INJURY ACCIDENTS	601
NUMBER OF FATALITIES	34
NUMBER OF INJURIES	919

Figure 3 COUNT-ACCIDENTS Output

REQUEST FOR HIS ACCIDENT INFORMATION

TO: *Montana Highway Traffic Safety Division*
Capitol Station
Helena, Montana 59601

FROM: *County Commissioners, Park County*
Livingston, Montana 59047

PROGRAM: *COUNT - ACCIDENTS*

REQUIRED PARAMETERS: *none*

OPTIONAL PARAMETERS:

(a) DATA: *none*
START-MILEPOINT: *none*
END-MILEPOINT: *none*

(b) LOCATION: *none*
CITY: *none*
COUNTY: *Park County*

(c) START-DATE: *January 1, 1975*
END-DATE: *March 31, 1975*

(d) START-ACCIDENT: *none*
END-ACCIDENT: *none*

(e) SPECIAL SELECT CONDITIONS: *none*

Sample 4

SUM-BY-DAY-&-TIME

(a) Description - this is a summary report which will give an accounting of total accidents and fatal accidents by the day of the week and the hour of occurrence. An example of the output is shown in Figure 4 on page 20.

(b) Required parameters - none.

(c) Optional parameters - there are five listed below.

(1) DATA, START-MILEPOINT, END-MILEPOINT (see page 2, 3). If this option is not specified, no processing will be performed on a system or route basis.

(2) LOCATION, CITY, COUNTY (see page 3). If only a city name is specified, one summary report is produced showing the accidents within the city. If a county or the entire state area is specified, a rural summary, a municipal summary, and a total summary are produced. If this option is not specified, the program will assume all recorded accidents for the entire state are to be processed.

(3) START-DATE, END-DATE (see page 6). If this option is not specified, the program will assume all recorded accidents for total file history are to be processed.

(4) START-ACCIDENT, END-ACCIDENT (see page 6, 7). If this option is not specified, no selection based on accident number is performed.

(5) SELECT (see page 9). Stipulate special restrictions you would like to impose on the accident records processed.

(d) In Sample 5 on page 21, we see an example of a typical request which a user might send to the Montana Highway Traffic Safety Division.

This request would provide a summary by day of week and hour of occurrence of fatal and total legally reportable accidents on the Interstate system during the first five months of 1975 that were reported by Highway Patrol Officers. (The agency code for designating the Montana Highway Patrol is 0 0 0.)

ACCIDENTS FOR THE COUNTY OF GALLATIN FROM 07/01/74 TO 07/31/74

TOTAL
*****

	TOTAL		MONDAY		TUESDAY		WEDNESDAY		THURSDAY		FRIDAY		SATURDAY		SUNDAY	
HOUR	ALL	FATAL	ALL	FATAL	ALL	FATAL	ALL	FATAL	ALL	FATAL	ALL	FATAL	ALL	FATAL	ALL	FATAL
MIDNIGHT	2						1				1					
1:00	7	1			1		1		3		1		1	1		
2:00	6		1		1				1				1		2	
3:00																
4:00																
5:00	2	1	1	1							1					
6:00	2		2													
7:00	3				2								1			
8:00	2				1				1							
9:00	5		1		2								2			
10:00																
11:00	6	1			1		1		1		2	1	1			
NOON	3		1		1										1	
1:00	2				1								1			
2:00	3		1		1								1			
3:00	6		1		1		2						2			
4:00	3				1		1						1			
5:00	5		1		1						1		1		1	
6:00	4	1	1	1					1				2			
7:00	3								1		1				1	
8:00	6				1		2				2				1	
9:00	3		2						1							
10:00	5		1		1						1		1		1	
11:00	5				1		1				1		2			
NOT STATED	1				1											
TOTALS	84	4	13	2	18		9		9		11	1	17	1	7	

(02)

Figure 4 SUM-BY-DAY-TIME Output

REQUEST FOR HIS ACCIDENT INFORMATION

TO: *Montana Highway Traffic Safety Division*
Capitol Station
Helena, Montana 59601

FROM: *Montana Highway Patrol, Hustad County*
Helena, Montana 59601

PROGRAM: *SUM-BY-DAY-TIME*

REQUIRED PARAMETERS: *none*

OPTIONAL PARAMETERS:

(a) DATA: *Federal Aid Interstate System*
START-MILEPOINT: *none*
END-MILEPOINT: *none*

(b) LOCATION: *State of Montana, legally reportable accidents only.*
CITY: *none*
COUNTY: *none*

(c) START-DATE: *January 1, 1975*
END-DATE: *May 31, 1975*

(d) START-ACCIDENT: *75 000 000 000*
END-ACCIDENT: *75 000 999 999*

(e) SPECIAL SELECT CONDITIONS: *none*

Sample 5

SUM-BY-CONTR-CIRC

(a) Description - this summary report will print out the number of accidents according to thirty-five different contributing circumstances included in the list below.

Failed to have vehicle under control	Inattentive driving
Inexperience	Blackout, heart, stroke, etc.
Fell asleep	Sun glare
Raining	Snowing
Whiteout	Blowing snow
Whiteout - meeting or following veh.	Dust storm
Dust caused by wind or vehicle	Road slippery or icy
Other weather condition	Improper hitch
Blow out - flat tire	Stone thrown by vehicle
Avoiding another vehicle	Avoiding pedestrian
Striking or avoiding domestic animal	Striking or avoiding wild animal
Striking or avoiding object in road	Distraction within vehicle
Distraction from outside vehicle	Unwarranted slowing
Blinded by glaring lights	Passenger fell from vehicle
Occupant releases vehicle	Indian in violation on reservation
Traf. control sign., missing, down	Wind blowing
Water on highway	Fog
Load shifted	

The report breaks the number of accidents down into rural, urban, and total. Summaries are printed for six different categories of highway:

(a) Federal Aid Interstate
(b) Federal Aid Primary
(c) Federal Aid Secondary
(d) Federal Aid Urban
(e) Not on Federal Aid System
(f) All accidents

An example of one page of the output is shown in Figure 5 on page 23.

SUMMARY BY CONTRIBUTING CIRCUMSTANCES

COUNTY OF GALLATIN
REPORTING PERIOD FROM 07/01/74 TO 07/31/74

ALL SYSTEMS	RURAL NUMBER OF ACCIDENTS	RURAL PERCENTAGE OF ACCIDENTS	URBAN NUMBER OF ACCIDENTS	URBAN PERCENTAGE OF ACCIDENTS	TOTAL NUMBER OF ACCIDENTS	TOTAL PERCENTAGE OF ACCIDENTS
FAILED TO HAVE VEHICLE UNDER CONTROL	11	23.40	1	2.70	12	14.29
INATTENTIVE DRIVING	11	23.40	1	2.70	12	14.29
INEXPERIENCE	4	8.51			4	4.76
BLACKOUT, HEART, STROKE, ETC						
FELL ASLEEP	5	10.64			5	5.95
SUN GLARE	2	4.26			2	2.38
RAINING	1	2.13			1	1.19
SNOWING						
WHITEOUT						
BLOWING SNOW						
WHITEOUT -- MEETING OR FOLLOWING VEH						
DUST STORM						
DUST CAUSED BY WIND OR VEHICLE						
ROAD SLIPPERY OR ICY	1	2.13			1	1.19
OTHER WEATHER CONDITIONS						
IMPROPER HITCH						
BLOW OUT -- FLAT TIRE	1	2.13			1	1.19
STONE THROWN BY VEHICLE						
AVOIDING ANOTHER VEHICLE	3	6.38			3	3.57
AVOIDING PEDESTRIAN						
STRIKING OR AVOIDING DOMESTIC ANIMAL	3	6.38			3	3.57
STRIKING OR AVOIDING WILD ANAMAL	1	2.13			1	1.19
STRIKING OR AVOIDING OBJECT IN ROAD	1	2.13			1	1.19
DISTRACTION WITHIN VEHICLE	1	2.13			1	1.19
DISTRACTION FROM OUTSIDE VEHICLE						
UNWARRANTED SLOWING						
BLINDED BY GLARING LIGHTS						
PASSENGER FELL FROM VEHICLE	1	2.13			1	1.19
OCCUPANT RELEASES VEHICLE						
INDIAN IN VIOLATION ON RESERVATION						
TRAF CONTROL SIGN -- MISSING, DOWN						
WIND BLOWING						
WATER ON HIGHWAY						
FOG						
LOAD SHIFTED						
TOTAL NUMBER OF ACCIDENTS	47		37		84	

Figure 5 SUM-BY-CONTR-CIRC Output

SUM-BY-CONTR-CIRC (cont'd)

(b) Required parameters - none.

(c) Optional parameters - there are five listed below.

(1) DATA, START-MILEPOINT, END-MILEPOINT (see page 2, 3). If this option is not specified, no processing will be performed on a system or route basis.

(2) LOCATION, CITY, COUNTY (see page 3). If this option is not specified, the program will assume all recorded accidents from the entire state of Montana are to be processed.

(3) START-DATE, END-DATE (see page 6). If this option is not specified, the program will assume all recorded accidents for total file history are to be processed.

(4) START-ACCIDENT, END-ACCIDENT (see page 6, 7). If this option is not specified, no selection based on accident number is performed.

(5) SELECT (see page 9). Stipulate special restrictions you would like to impose on the accident records to be processed.

(d) In Sample 6 on page 25, we see an example of a typical request which a user might send to the Montana Highway Traffic Safety Division.

This request would provide a summary by contributing circumstances of all accidents occurring on a portion of Secondary 289 from the outskirts of Norris to its intersection with Secondary 288 during four months of 1974.

REQUEST FOR HIS ACCIDENT INFORMATION

TO: *Montana Highway Traffic Safety Division*
Capitol Station
Helena, Montana 59601

FROM: *Traffic Section, Montana Dept. of Highways*
Helena, Montana 59601

PROGRAM: *SUM-BY-CONTR-CIRC*

REQUIRED PARAMETERS: *none*

OPTIONAL PARAMETERS:

(a) DATA: *Federal Aid Secondary 289*
START-MILEPOINT: *Milepoint 1*
END-MILEPOINT: *Milepoint 26*

(b) LOCATION: *none*
CITY: *none*
COUNTY: *none*

(c) START-DATE: *May 15, 1974*
END-DATE: *September 15, 1974*

(d) START-ACCIDENT: *none*
END-ACCIDENT: *none*

(e) SPECIAL SELECT CONDITIONS: *none*

Sample 6

FORM-16

(a) Description - the program FORM-16 produces 19 of the 21 summaries of the National Safety Council's Form 16 report. Three sets of these 19 summaries are printed for each FORM-16 program request. An example of a portion of the output is shown in Figures 6 and 7 on pages 27 and 28.

(b) Required parameters - none.

(c) Optional parameters - there are five listed below.

(1) DATA, START-MILEPOINT, END-MILEPOINT (see page 2, 3). If this option is not specified, no processing will be performed on a system or route basis.

(2) LOCATION, CITY, COUNTY (see page 3). If a county or the entire state is specified, the three sets produced are a rural summary, an urban summary, and all accidents. If a city is specified, the three sets are legally reportable, non-reportable accidents, and all accidents for that city.

(3) START-DATE, END-DATE (see page 6). If this option is not specified, the program will assume all recorded accidents for total file history are to be processed.

(4) START-ACCIDENT, END-ACCIDENT (see page 6, 7). If this option is not specified, no selection based on accident number is performed.

(5) SELECT (see page 9). Stipulate special restrictions you would like to impose on the accident records to be processed.

(d) In Sample 7 on page 29, we see an example of a typical request which a user might send to the Montana Highway Traffic Safety Division.

This request would provide three summaries of the Form 16 type relating to accidents occurring on the Federal Aid Urban System within the city limits of Billings during calendar 1974 that were reported by Officers of the Billings Police Department. (The agency code designating the Billings Police Department is 010, see page 4, TABLE I.)

CITY OF BOZEMAN
REPORTING PERIOD FROM 07/01/74 TO 07/31/74

SUMMARY OF MOTOR VEHICLE ACCIDENTS

ALL ACCIDENTS

LEGALLY REPORTABLE ACCIDENTS ARE THOSE INVOLVING DEATH, BODILY INJURY, OR PROPERTY DAMAGE OF $250 OR MORE TO THE PROPERTY OF ONE PERSON.

1A. TYPE OF MOTOR-VEHICLE ACCIDENT.	NUMBER OF ACCIDENTS											
	TOTAL				ON ROADWAY				OFF ROADWAY			
	TOTAL	FATAL	NONFATAL INJURY	PROP DAMAGE	TOTAL	FATAL	NONFATAL INJURY	PROP DAMAGE	TOTAL	FATAL	NONFATAL INJURY	PROP DAMAGE
NONCOLLISION												
1. OVERTURNING												
2. OTHER NONCOLLISION												
COLLISION INVOLVING:												
3. PEDESTRIAN												
4. MV IN TRANSPORT	20		8	12	20		8	12				
5. MV ON OTHER ROADWAY												
6. PARKED MV	3		1	2	3		1	2				
7. RAILWAY TRAIN												
8. PEDALCYCLIST	2		2		2		2					
9. ANIMAL												
10. FIXED OBJECT	2		2									
11. OTHER OBJECT												
12. UNKNOWN	1			1	1			1	2		2	
TOTALS	28		13	15	26		11	15	2		2	

1B. TYPE OF MOTOR-VEHICLE ACCIDENT.	NUMBER OF PERSONS					
	TOTAL KILLED	TOTAL INJURED	INCAPACITATING INJURY	NON-INCAPAC. EVIDENT INJURY	POSSIBLE INJURY	NO INJURY
NONCOLLISION						
1. OVERTURNING						
2. OTHER NONCOLLISION						
COLLISION INVOLVING:						
3. PEDESTRIAN						
4. MV IN TRANSPORT		8	1	2	5	36
5. MV ON OTHER ROADWAY						
6. PARKED MV		1	1			1
7. RAILWAY TRAIN						
8. PEDALCYCLIST		2	1	1		2
9. ANIMAL						
10. FIXED OBJECT		2	1	1		1
11. OTHER OBJECT						
12. UNKNOWN						1
TOTALS		13	4	4	5	41

Figure 6 FORM-16 Partial Output

CITY OF BOZEMAN
REPORTING PERIOD FROM 07/01/74 TO 07/31/74

SUMMARY OF MOTOR VEHICLE ACCIDENTS

ALL ACCIDENTS

11. TYPE OF VEHICLE.	ALL ACCIDENTS	FATAL ACCIDENTS	INJURY ACCIDENTS
1. PASSENGER CAR	37		14
2. PASSENGER CAR & TRAILER			
3. TRUCK OR TRUCK TRACTOR	8		4
4. TRUCK TRACTOR & SEMI-TRAILER			
5. OTHER TRUCK COMBINATION	1		
6. FARM TRACTOR AND/OR EQUIP			
7. TAXICAB			
8. BUS			
9. SCHOOL BUS			
10. MOTORCYCLE	3		3
11. MOTOR SCOOTER/MOTOR BIKE			
12. OTHER	6		4
13. NOT STATED			
TOTALS	55		25
SPECIAL VEHICLES INCLUDED ABOVE			
14. EMERGENCY (INCL. PRIVATE)			
15. MILITARY VEHICLES			
16. OTHER PUBLICLY OWNED VEHS			

12. ROAD SURFACE CONDITION.	ALL ACCIDENTS	FATAL ACCIDENTS	INJURY ACCIDENTS
1. DRY	26		12
2. WET	2		1
3. SNOWY OR ICY			
4. OTHER			
5. NOT STATED			
TOTALS	28		13

13. LIGHT CONDITION	ALL ACCIDENTS	FATAL ACCIDENTS	INJURY ACCIDENTS
1. DAYLIGHT	21		8
2. DAWN OR DUSK			
3. DARKNESS	7		5
4. NOT STATED			
TOTALS	28		13

(82)

Figure 7 FORM-16 Partial Output

REQUEST FOR HIS ACCIDENT INFORMATION

TO: *Montana Highway Traffic Safety Division*
Capitol Station
Helena, Montana 59601

FROM: *Chief of Police, City of Billings*
Billings, Montana 59601

PROGRAM: *FORM - 16*

REQUIRED PARAMETERS: *none*

OPTIONAL PARAMETERS:

(a) DATA: *Federal Aid Urban System*
START-MILEPOINT: *none*
END-MILEPOINT: *none*

(b) LOCATION: *none*
CITY: *Billings, Montana*
COUNTY: *none*

(c) START-DATE: *January 1, 1974*
END-DATE: *December 31, 1974*

(d) START-ACCIDENT: *74 010 0000 0000*
END-ACCIDENT: *74 010 999 9999*

(e) SPECIAL SELECT CONDITIONS: *none*

Sample 7

SUM-BY-TRAFFICWAY

(a) Description - This program prints a set of forty-one accident summaries with each summary broken down according to the class of trafficway. The titles of the forty-one summaries are shown in List 3 on page 31.

An example of a portion of the output is shown in Figure 8 on page 32.

(b) Required parameters - none.

(c) Optional parameters - there are five listed below.

(1) DATA, START-MILEPOINT, END-MILEPOINT (see page 2, 3). If this option is not specified, no processing will be performed on a system or route basis.

(2) LOCATION, CITY, COUNTY (see page 3). If this option is not specified, the program will assume all recorded accidents for the entire state of Montana are to be processed.

(3) START-DATE, END-DATE (see page 6). If this option is not specified, the program will assume all recorded accidents for total file history are to be processed.

(4) START-ACCIDENT, END-ACCIDENT (see page 6, 7). If this option is not specified, no selection based on accident number is performed.

(5) SELECT (see page 9). Stipulate special restrictions you would like to impose on the accident records to be processed.

(d) In Sample 8 on page 33, we see an example of a typical request which a user might send to the Montana Highway Traffic Safety Division.

This request would provide the forty-one summaries by class of trafficway for all recorded accidents in the entire state of Montana for the calendar year 1972.

(1) ACCIDENTS BY COUNTY
(2) ACCIDENTS BY FIRST HARMFUL EVENT
(3) ACCIDENTS BY SEVERITY
(4) ACCIDENTS BY MONTH
(5) ACCIDENTS BY DAY OF WEEK
(6) ACCIDENTS BY HOUR OF OCCURRENCE
(7) ACCIDENTS BY AM OR PM
(8) ACCIDENTS BY WEATHER CONDITION
(9) ACCIDENTS BY ROAD CONDITION
(10) ACCIDENTS BY LIGHT CONDITION
(11) ACCIDENTS BY RELATIONSHIP TO JUNCTION
(12) INVESTIGATED ACCIDENTS BY HAZARDOUS MOVING VIOLATION
(13) INVESTIGATED ACCIDENTS BY TRAFFIC CONTROLS
(14) INVESTIGATED ACCIDENTS BY ROAD DEFECTS
(15) ACCIDENTS INVOLVING WILD ANIMALS BY DAY OF WEEK
(16) ACCIDENTS INVOLVING DOMESTIC ANIMALS BY DAY OF WEEK
(17) ACCIDENTS INVOLVING WILD ANIMALS BY MONTH
(18) ACCIDENTS INVOLVING DOMESTIC ANIMALS BY MONTH
(19) ACCIDENTS INVOLVING WILD ANIMALS BY HOUR
(20) ACCIDENTS INVOLVING DOMESTIC ANIMALS BY HOUR
(21) ACCIDENTS INVOLVING WILD ANIMALS BY LIGHT CONDITION
(22) ACCIDENTS INVOLVING DOMESTIC ANIMALS BY LIGHT CONDITION
(23) ACCIDENTS BY CONTRIBUTING CIRCUMSTANCES
(24) VEHICLES BY STATE OF REGISTRATION
(25) VEHICLES BY BODY STYLE
(26) VEHICLES BY TRAILER STYLE
(27) VEHICLES BY DAMAGE SEVERITY
(28) VEHICLES BY VISION IMPAIRMENT
(29) VEHICLES BY MECHANICAL DEFECT
(30) VEHCILES BY AGE OF VEHICLE
(31) DRIVER BY SEX
(32) DRIVER BY AGE
(33) DRIVER BY PHYSICAL DEFECT
(34) DRIVER BY SOBRIETY
(35) DRIVER BY RE-EXAMINATION RECOMMENDATION
(36) INJURIES BY COUNTY
(37) INJURIES BY SEX
(38) INJURIES BY LOCATION IN VEHICLE
(39) INJURIES BY SOBRIETY
(40) INJURIES BY AGE
(41) INJURIES BY SEVERITY

LIST 3 - Titles of SUM-BY-TRAFFICWAY summaries

COUNTY OF GALLATIN REPORTING PERIOD FROM 07/01/74 TO 07/31/74

ACCIDENT SUMMARIES.
UNDER "FATAL" IS NUMBER OF FATAL ACCIDENTS.
UNDER "TOTAL" IS NUMBER OF FATAL, INJURY AND PROPERTY DAMAGE ACCIDENTS.

	INTERSTATE		US HIGHWAY		STATE HIGHWAYS		COUNTY ROADS		LOCAL STREET		***TOTALS***	
	FATAL	TOTAL	FATAL	TOTAL	FATAL	TOTAL	FATAL	TOTAL	FATAL	TOTAL	FATAL	TOTAL
ACCIDENTS BY WEATHER CONDITION												
CLEAR	1	6	2	32	1	13		10		20	4	81
RAINING				2						1		3
SNOWING												
FOG												
OTHER												
NOT STATED												
TOTAL	1	6	2	34	1	13		10		21	4	84
ACCIDENTS BY ROAD CONDITION												
DRY	1	6	2	32	1	12		10		19	4	79
WET				2		1				2		5
SNOWY												
ICY												
OTHER												
NOT STATED												
TOTAL	1	6	2	34	1	13		10		21	4	84
ACCIDENTS BY LIGHT CONDITION												
DAYLIGHT	1	4		18	1	10		7		15	2	54
DAWN OR DUSK								1				1
DARKNESS, LIT				6						4		10
DARKNESS, UNLIT		2	2	10		3		2		2	2	19
OTHER												
NOT STATED												
TOTAL	1	6	2	34	1	13		10		21	4	84
ACCIDENTS BY RELATIONSHIP TO JUNCTION												
NON-JUNCTION	1	6	2	19	1	6		9		10	4	50
INTERSECTION				5		1				10		16
INTERSECTION-RELATED				6		3		1		1		11
DRIVEWAY ACCESS				4		3						7
TOTAL	1	6	2	34	1	13		10		21	4	84

(32)

Figure 8 SUM-BY-TRAFFICWAY Output

REQUEST FOR HIS ACCIDENT INFORMATION

TO: *Montana Highway Traffic Safety Division*
Capitol Station
Helena, Montana 59601

FROM: *Montana Department of Highways*
Helena, Montana 59601

PROGRAM: *SUM-BY-TRAFFICWAY*

REQUIRED PARAMETERS: *none*

OPTIONAL PARAMETERS:

(a) DATA: *none*
START-MILEPOINT: *none*
END-MILEPOINT: *none*

(b) LOCATION: *entire State of Montana all accidents*
CITY: *none*
COUNTY: *none*

(c) START-DATE: *January 1, 1972*
END-DATE: *December 31, 1972*

(d) START-ACCIDENT: *none*
END-ACCIDENT: *none*

(e) SPECIAL SELECT CONDITIONS: *none*

Sample 8

MOTORCYCLE-SUMMARY

(a) Description - this program prints a set of twenty-three accident summaries involving motorcycles. The titles of the twenty-three summaries are shown in List 4 on page 35.

An example of a portion of the output is shown in Figure 9 on page 36.

(b) Required parameters - none.

(c) Optional parameters - there are five listed below.

(1) DATA, START-MILEPOINT, END-MILEPOINT (see page 2, 3). If this option is not specified, no processing will be performed on a system or route basis.

(2) LOCATION, CITY, COUNTY (see page 3). If this option is not specified, the program will assume all recorded accidents for the entire state of Montana are to be processed.

(3) START-DATE, END-DATE (see page 6). If this option is not specified, the program will assume all recorded accidents for total file history are to be processed.

(4) START-ACCIDENT, END-ACCIDENT (see page 6, 7). If this option is not specified, no selection based on accident number is performed.

(5) SELECT (see page 9). Stipulate special restrictions you would like to impose on the accident records to be processed.

(d) In Sample 9 on page 37, we see an example of a typical request which a user might send to the Montana Highway Traffic Safety Division.

This request would provide the twenty-three summaries of all recorded Motorcycle accidents for the entire state of Montana during the calendar year 1974, where a contributing circumstance was inexperience of the motorcycle driver and the age of the driver was between sixteen and twenty-five.

(1) MOTORCYCLE ACCIDENT TOTALS

(2) MOTORCYCLISTS INJURIES

(3) MOTORCYCLE ACCIDENTS BY TYPE

(4) MOTORCYCLE ACCIDENT LOCATIONS

(5) TYPE OF ROADWAY

(6) ACCIDENTS BY POPULATION OF CITY

(7) ACCIDENT BY TYPE OF COLLIDING VEHICLE

(8) ACCIDENTS BY TYPE OF COLLISION

(9) ACCIDENTS BY TYPE OF COLLISION AT INTERSECTION

(10) ACCIDENTS BY TYPE OF COLLISION NOT AT INTERSECTION

(11) ACCIDENTS BY DEFECT IN MOTORCYCLE

(12) ACCIDENTS BY AGE OF MOTORCYCLE DRIVER

(13) ACCIDENTS BY SEX OF MOTORCYCLE DRIVER

(14) ACCIDENTS BY SOBRIETY OF MOTORCYCLE DRIVER

(15) ACCIDENTS BY MOTORCYCLISTS VIOLATION

(16) ACCIDENTS BY OTHER VEHICLE VIOLATIONS

(17) TIME OF ACCIDENT

(18) DAY OF WEEK

(19) MONTH

(20) LIGHT CONDITION

(21) WEATHER CONDITION

(22) ROAD SURFACE CONDITION

(23) BY COUNTY

LIST 4 - Titles of MOTORCYCLE summaries

MOTORCYCLE ACCIDENT LOCATION

ACCIDENT LOCATION	URBAN AREAS TOTAL	URBAN AREAS % OF TOTAL	URBAN AREAS FATAL	RURAL AREAS TOTAL	RURAL AREAS % OF TOTAL	RURAL AREAS FATAL
ON ROADWAY	3	100				
OFF ROADWAY						
T O T A L	3	100				

TYPE OF ROADWAY	TOTAL	% OF TOTAL	FATAL	TOTAL	% OF TOTAL	FATAL
INTERSTATE SYSTEM						
U. S. NO. ROUTE						
STATE NO. ROUTE						
COUNTY ROAD						
CITY STREET	3	100				
OTHER TRAFFICWAYS						
T O T A L	3	100				

CITIES OVER 2,500	TOTAL	% OF TOTAL	FATAL
2500 - 5000			
5000 - 10,000			
10,000 - 25,000	3	100	
25,000 - 50,000			
50,000 OR MORE			
T O T A L	3	100	

TYPE OF VEHICLE COLLIDING WITH CYCLE IN MULTI-VEHICLE CYCLE ACCIDENTS	STATEWIDE TOTAL	STATEWIDE FATAL	URBAN TOTAL	URBAN FATAL	RURAL TOTAL	RURAL FATAL
PASSENGER CAR	2		2			
PICKUP						
TRUCK						
BUS OR SCHOOL BUS						
OTHER MOTORCYCLE						
OTHER	1		1			
T O T A L	3		3			

Figure 9 MOTORCYCLE Output

REQUEST FOR HIS ACCIDENT INFORMATION

TO: *Montana Highway Traffic Safety Division*
Capitol Station
Helena, Montana 59601

FROM: *National Safety Council*
Chicago Illinois, 60611

PROGRAM: *MOTORCYCLE-SUMMARY*

REQUIRED PARAMETERS: *none*

OPTIONAL PARAMETERS:

(a) DATA: *none*
START-MILEPOINT: *none*
END-MILEPOINT: *none*

(b) LOCATION: *entire State of Montana for all accidents*
CITY: *none*
COUNTY: *none*

(c) START-DATE: *January 1, 1974*
END-DATE: *December 31, 1974*

(d) START-ACCIDENT: *none*
END-ACCIDENT: *none*

(e) SPECIAL SELECT CONDITIONS: *restrict the accident records processed to those for motorcycle driver between ages 16 and 25 where inexperience was a contributing circumstance.*

Sample 9

LIST-FA-ACC-DIREC

(a) Description - this program creates a list of all the accidents along a stretch of Federal Aid interstate, primary, or secondary highway where the location of the accident has been indicated by stating the federal aid designation of the highway and the milepoint. It is used for accessing accidents by location (milepoint) rather than by accident number. Two forms of the output are available. One is a more complete tabulation of the data relating to the accident and is referred to as List 1. The other is reduced in content and is referred to a List 2. In the List 5 on page 39, the items which are included in each form of the list are shown.

Because the information that is supplied in the two lists is presented in coded form, the program makes available an extra sheet which explains the coding system if the user wants to take advantage of the explanation sheet.

An example of the output from a List 1 type printout is shown in Figure 10 on page 40. In Figure 11 on page 41 there is an example of the code explanation sheet.

(b) Required parameters - There is one.

(1) DATA (see page 2). The portion of the Federal Aid system to be scanned must be specified. The options are the Interstate system, the Primary system, the Secondary system, the Interstate plus the Primary system, or the total Federal Aid system. A specific federal aid route can be designated by listing the route number after the system designation.

LIST 1	LIST 2
(1) ROUTE NUMBER	(X)
(2) MILEPOINT	(X)
(3) COUNTY	
(4) ACCIDENT NUMBER	(X)
(5) DATE	(X)
(6) TIME	
(7) NUMBER OF VEHICLES	
(8) NUMBER OF PEDESTRIANS	
(9) NUMBER OF FATALITIES	(X)
(10) NUMBER OF INJURIES	(X)
(11) FIRST HARMFUL EVENT	(X)
(12) JUNCTION RELATED LOCATION	
(13) ROADWAY RELATED LOCATION	
(14) WEATHER CONDITION	
(15) ROAD CONDITION	(X)
(16) LIGHT CONDITION	
(17) COLLISION TYPE	(X)

LIST 5 - Lists of LIST-FA-ACC-DIREC items

ROUTE NUMBER	MILEPOINT	CNTY	ACCIDENT NUMBER	DATE	TIME	#VEH	#PED	#FAT	#INJ	EVNT	JUNCT	WEATH	LIGHT	TYPE
P00008	003+0.600	28	720001651106	11/24/72	0830	1			2	10		2	1	3	1	7
P00008	005+0.400	28	740001571003	10/22/74	1815	1			2	10		2	1	1	1	7
P00008	007+0.500	28	730002760302	3/11/73	1245	1			2	1		2	1	5	1	7
P00008	008+0.070	28	73R02807A003	7/08/73	0430	1			2	1		2	1	1	4	7
P00008	011+0.900	28	740002190808	8/22/74	0220	1			2	10		2	1	1	4	7
P00008	012+0.720	28	720001650607	6/18/72	1140	1			2	10		2	2	2	1	7
P00008	014+0.400	28	750001850402	4/25/75	1900	1			3	2		2	3	4	4	7
P00008	017+0.700	28	730002880399	3/31/73	0100	1			2	1		2	1	1	4	7
P00008	018+0.100	28	740002190101	1/29/74	2345	1			2	10		2	1	1	4	7
P00008	019+0.020	28	720002881105	11/18/72	0400	1			2	1		1	1	1	4	7
P00008	026+0.300	28	740002880505	5/05/74	0800	1			3	10		2	1	1	1	7
P00008	028+0.600	5	740002880404	4/25/74	1950	1			2	10		2	1	1	1	7
P00008	029+0.300	5	730002600808	8/26/73	1920	1			2	1		2	1	1	1	7
P00008	029+0.600	5	740001850603	6/28/74	1530	1			2	10		2	1	1	1	7
P00008	030+0.100	5	750002600203	2/16/75	0430	1			2	1		1	1	4	4	7
P00008	033+0.900	5	740001850910	9/27/74	0545	1			2	10		2	1	4	4	7
P00008	034+0.920	5	720002951101	11/10/72	1600	1			5	1		2	1	1	1	7
P00008	038+0.300	5	740001851201	12/01/74	0130	1			2	10		2	1	1	4	7
P00008	039+0.900	5	720002110903	9/11/72	0240	1			2	1		2	1	1	4	7
P00008	040+0.820	5	740002601001	10/18/74	0015	1			2	10		2	1	1	3	7
P00008	046+0.100	5	730002601107	11/18/73	1615	1	2		2	3	3	1	3	4	1	7
P00008	046+0.400	5	720002890201	2/13/72	1730	1			2	1		2	1	4	2	7
P00008	047+0.900	5	730001850606	6/30/73	0730	1			4	10		2	1	1	2	7
P00008	049+0.860	5	730002601002	10/14/73	0230	1			2	10	2	2	2	2	4	7
P00008	052+0.600	5	720002601101	11/20/72	1910	1			2	9		1	1	1	4	7
P00008	054+0.260	5	740001240602	6/19/74	1915	1			3	1		1	1	1	1	7
P00008	058+0.900	43	740001411201	12/03/74	1330	1			2	1		1	1	1	1	7
P00008	069+0.600	43	730002570601	6/23/73	0915	1		1	2	10		2	5	1	1	7
P00008	075+0.480	43	720001910801	8/01/72	1715	1		1	3	1		1	1	1	1	7
P00008	075+0.800	43	740003080201	2/02/74	0500	1			2	10		2	1	1	4	7
P00008	080+0.000	43	750002970403	4/15/75	1145	1			2	10		2	1	1	1	7
P00008	081+0.150	43	730003080802	8/20/73	1135	1			2	10		2	1	1	1	7
P00008	082+0.200	43	730003081205	12/23/73	0240	1			2	1		2	4	4	4	7
P00008	088+0.000	43	720002571101	11/09/72	0700	1			2	10		2	1	4	1	7
P00008	092+0.900	43	720002570804	8/29/72	1600	1		1	2	1		2	1	1	1	7

---- NUMBER OF RECORDS PRINTED: 35

(140)

Figure 10 LIST-FA-ACC-DIREC Output

```
LIST-FA-ACC-DIREC

        FIELDS LISTED ARE:

           ROUTE NUMBER              NUMBER OF VEHICLES        JUNCTION-RELATED LOCATION
           MILEPOINT                 NUMBER OF PEDESTRIANS     ON/OFF ROADWAY
           COUNTY                    NUMBER OF FATALITIES      WEATHER CONDITION
           ACCIDENT NUMBER           NUMBER OF INJURIES        ROAD CONDITION
           DATE OF OCCURRENCE        FIRST HARMFUL EVENT       LIGHT CONDITION
           TIME OF OCCURRENCE                                  COLLISION TYPE


        *-------- ACCIDENT NUMBER --------*

           *--- INVESTIGATED ---*              *--- UNINVESTIGATED ---*
            1-2   YEAR                         1-2   YEAR
            3-5   AGENCY                         3   R=RURAL, M=MUNICIPAL
            6-8   BADGE NUMBER                 4-6   COUNTY (RURAL) OR CITY (MUNICIPAL)
            9-10  MONTH                        7-8   MONTH
           11-12  SEQUENCE NUMBER              9-12  SEQUENCE NUMBER


        *--------- FIRST HARMFUL EVENT --------*

          00  NOT STATED                            06  COLLISION WITH PARKED MV
          01  OVERTURNED                            07  COLLISION WITH RAILWAY TRAIN
          02  OTHER NON-COLLISION                   08  COLLISION WITH PEDALCYCLE
          03  COLLISION WITH PEDESTRIAN             09  COLLISION WITH ANIMAL
          04  COLLISION WITH MV IN TRANSPORT        10  COLLISION WITH FIXED OBJECT
          05  COLLISION WITH MV IN OTHER ROADWAY     11  COLLISION WITH OTHER OBJECT


        *-------- JUNCTION-RELATED LOCATION AND ON/OFF ROADWAY --------*

                  ----- JUNCTION -----                    ----- ON/OFF -----
          0  NON-JUNCTION    2  INTERSECTION-RELATED        1  ON ROADWAY
          1  INTERSECTION    3  DRIVEWAY ACCESS             2  OFF ROADWAY


        *-------- WEATHER CONDITION AND ROAD CONDITION --------*

               ----- WEATHER -----                  ----- ROAD -----
          0  NOT STATED    3  SNOWING          0  NOT STATED    3  SNOWY
          1  CLEAR         4  FOG              1  DRY           4  ICY
          2  RAINING       5  OTHER            2  WET           5  OTHER


        *-------- LIGHT CONDITION AND COLLISION TYPE --------*

                ----- LIGHT -----                      ----- COLLISION -----
          0  NOT STATED    3  DARKNESS,LIT          1  HEAD ON    4  SIDESWIPE MEETING
          1  DAYLIGHT      4  DARKNESS,UNLIT        2  REAR END   5  SIDESWIPE PASSING
          2  DAWN/DUSK     5  OTHER                 3  ANGLE      6  BACKED INTO
                                                                  7  OTHER
          DAC.FIRST-EVENT *NE* 4  *AND*  DAC.#-INJURIES *GE* 2
```

Figure 11 LIST-FA-ACC-DIREC Output

LIST-FA-ACC-DIREC (cont'd)

(c) Optional parameters - There are seven listed below.

(1) START-MILEPOINT, END-MILEPOINT (see page 3). If this option is not specified, processing will be performed on a system or total route basis only.

(2) LIST - state whether you desire the complete List 1, or the abbreviated List 2. If this option is not specified, the program provides List 1.

(3) CODE - state whether you desire the explanation of the coded information or not. If this option is not specified, the program provides the code explanation.

(4) LOCATION, CITY, COUNTY (see page 3). If this option is not specified, the program will assume all recorded accidents for the entire state of Montana are to be processed.

(5) START-DATE, END-DATE (see page 6). If this option is not specified, the program assumes all recorded accidents for total file history are to be processed.

(6) START-ACCIDENT, END-ACCIDENT (see page 6, 7). If this option is not specified, no selection based on accident number is performed.

(7) SELECT (see page 9). Stipulate special restrictions you would like to impose on the accident records to be processed.

(d) In Sample 10 on page 43, we see an example of a typical request which a user might send to the Montana Highway Traffic Safety Division.

This request would provide a list of all accidents occurring on US Highway 2 (Federal Aid Primary Route 1) in Hill County during a portion of 1974, where one of the drivers involved had an out-of-state drivers license.

REQUEST FOR HIS ACCIDENT INFORMATION

TO: *Montana Highway Traffic Safety Division*
Capitol Station
Helena, Montana 59601

FROM: *Sheriff's Department, Hill County*
Havre, Montana 59501

PROGRAM: *LIST-FA-ACC-DIREC*

REQUIRED PARAMETERS:

(a) DATA: *US 2 Federal Aid Primary 1*

OPTIONAL PARAMETERS:

(a) START-MILEPOINT: *Mile point 332*
END-MILEPOINT: *Mile point 391*

(b) LIST: *Provide LIST 1*

(c) CODE *Provide Code Explanation Sheet*

(d) LOCATION: *none*
CITY: *none*
COUNTY: *Hill County*

(e) START-DATE: *May 1, 1974*
END-DATE: *October 1, 1974*

(f) START-ACCIDENT: *none*
END-ACCIDENT: *none*

(g) SPECIAL SELECT CONDITIONS: *restrict the accidents processed to those for which one driver had an out-of-state driver's license.*

Sample 10

If you are interested in having the MITRS Accident subsystem help you identify high accident occurrence locations, it is very conveniently designed to do exactly that. Two major methods are employed, one relating to urban or municipal accidents, the other to rural accidents. The next three programs we will discuss relate to the identification of high accident occurrence locations within any of the Montana cities listed in TABLE I on page 4.

BUILD-GRID-TABLE

A system has been developed to locate accidents within the corporate limits of the cities of TABLE I. The Montana Highway Integrated Traffic Records System has permanently stored in the Accident Records Subsystem files (a) the coordinates of each street intersection, and (b) the route number description of each street intersection.

Users of the Accident Records Subsystem should contact the Montana Highway Patrol Bureau or the Montana Highway Traffic Safety Division and request (1) the list of route numbers assigned to the streets in their city and (2) a LIST-GRID-TABLE output (described in the next section of the manual). LIST-GRID-TABLE provides a list of the intersections in a city, their coordinates and their location numbers.

BUILD-GRID-TABLE is to be used by a user city to update or add information to the table which is already stored in the system.

In the Figure 12 on page 45, an example is shown in which the information above the dashed line was already stored for a hypothetical city of Badgercreek, Montana, and the users of the system in the city wanted to add information about several new intersections which had been created by the construction of 7th street.

To obtain the list of street route numbers and the output from LIST-GRID-TABLE and to submit new data to be stored, you should contact

Montana Highway Traffic Safety Div
Capitol Station
Helena, Montana 59601

or

Montana Highway Patrol Bureau
1014 National Avenue
Helena, Montana 59601

LIST OF STREET INTERSECTIONS

FOR

BADGERCREEK, MONTANA

COORDINATE X	COORDINATE Y	Location Number		Intersection Description
0630	0660	0001	0007	1st Avenue and 1st Street
0630	0790	0002	0007	Main Street and 1st Street
0760	0790	0002	0008	Main Street and 2nd Street
0835	0790	0002	0009	Main Street and 3rd Street
0908	0826	0003	0010	Secondary 308 and 4th Street
0980	0855	0003	0011	Secondary 308 and 5th Street
0908	0870	0004	0010	2nd Avenue S and 4th Street
0980	0975	0005	0011	3rd Avenue S and 5th Street
1055	0870	0004	0012	2nd Avenue S and 6th Street
1055	0975	0005	0012	3rd Avenue S and 6th Street
1055	1010	0006	0012	4th Avenue S and 6th Street

- - - -

LIST-GRID-TABLE

(a) Description - this is a program that can be used to list the information that was stored by BUILD-GRID-TABLE, namely the East-West (X) coordinate, the North-South (Y) coordinate, the route location numbers, and the intersection names in a city, or all cities for which a Grid Table has been stored in the system.

An example of the output from LIST-GRID-TABLE is shown in Figure 13 on page 47.

(b) Required parameters - none.

(c) Optional parameters - there is one.

(1) CITY - If you desire the Grid Table for a single city to be listed, you should specify that city name. If this option is not specified, the program will assume that the list of all available grid tables should be printed out.

(d) An example of a typical request which a user might submit to the Montana Highway Traffic Safety Division in connection with LIST-GRID-TABLE is shown in Sample 11 on page 48.

This request would provide a list of all the coded intersections, their corresponding coordinates, and route location numbers for the city of Kalispell.

HIS GRID TABLE LISTING -- CITY OF GREAT-FALLS

COORD: X	COORD: Y	LOCATION NUMBERS		DESCRIPTION
1619	0906	0234	0410	15TH AVE SO & 35TH ST SO
1020	0890	0234	0379	15TH AVE SO & 4TH ST SO
1232	0355	0000	0000	15TH ST BLK EAGLE & 16TH ST
1241	0352	0000	0000	15TH ST BLK EAGLE & 17TH ST
1252	0352	0000	0000	15TH ST BLK EAGLE & 18TH ST
1263	0353	0000	0000	15TH ST BLK EAGLE & 19TH ST
1274	0356	0000	0000	15TH ST BLK EAGLE & 20TH ST
1225	0921	0619	0620	16TH ALLEY SO & HIGH ST
1211	0921	0619	0390	16TH ALLEY SO & 15TH ST SO
0937	0922	0233	0621	16TH AVE SO & VERDE DR
0960	0905	0233	0594	16TH AVE SO & 1ST ST SO
1234	0921	0233	0391	16TH AVE SO & 16TH ST SO
1251	0913	0233	0392	16TH AVE SO & 17TH ST SO
1269	0913	0233	0393	16TH AVE SO & 18TH ST SO
1289	0913	0233	0394	16TH AVE SO & 19TH ST SO
0969	0901	0233	0377	16TH AVE SO & 2ND ST SO
0969	0905	0233	0377	16TH AVE SO & 2ND ST SO
1306	0914	0233	0395	16TH AVE SO & 20TH ST SO
1020	0916	0233	0379	16TH AVE SO & 4TH ST SO
0625	0529	0622	0623	16TH ST NW & 5TH AVE NW
0625	0515	0622	0624	16TH ST NW & 6TH AVE NW
0625	0501	0622	0625	16TH ST NW & 7TH AVE NW

Figure 13 LIST-GRID-TABLE Output

REQUEST FOR HIS ACCIDENT INFORMATION

TO: *Montana Highway Traffic Safety Division*
Capitol Station
Helena, Montana 59601

FROM: *City Engineer's Office*
Kalispell,
Montana 59901

PROGRAM: *LIST-GRID-TABLE*

REQUIRED PARAMETERS: *none*

OPTIONAL PARAMETERS:

(a) CITY - *Kalispell*

Sample 11

HIGH-ACC-INTERSECTNS

(a) Description - this program provides the opportunity to carry out an analysis of intersection accidents within any city for which a grid table has been previously established and for which accident locations have been indicated by the use of the X - Y coordinate system. There are two ways the analysis can be performed.

(1) The program can be requested to list the top "n" locations, where for example if "n" were 5, the program would list the five intersections having the most accidents.

(2) The program can be requested to list all intersection with "n" or more accidents, where for example if "n" were 3, the program would list all the intersections having at least three accidents.

An example of the output from HIGH-ACC-INTERSECTNS is shown in Figure 14 on page 50.

(b) Required parameters - there are two listed below.

(1) CITY - the user must include the name of the city for which the intersection analysis is to be performed.

(2) SQUARE-SIZE - this parameter indicates the size to be used to define the limits of the intersection. Obviously, since the scale of the city maps used in specifying the coordinates of the intersections is different for each city, the size of the square will differ for each city. In addition, this gives the user flexibility in defining the extent of what he chooses to call an intersection. In Figure 15 on page 51, which is an exploded view of a portion of the Helena city map, if one wanted to define the intersection as that area lying between the curb limits extended, the SQUARE-SIZE might be listed as 5. On the same map, if you elected to include the approaches as part of the intersection, SQUARE-SIZE might be listed as 10. The intersection is then assumed to be a square whose side is of length 10 in coordinate units, and whose center is the point specified within the grid table for the particular city.

```
HIGH-ACC-INTERSECTNS

     CITY=BILLINGS
     START-DATE=07/01/74
     END-DATE=07/31/74
     #-INTERSECTIONS=05
     ACCIDENTS=ALL
     SQUARE-SIZE=16
```


GRAND & REHBERG LN

ACCIDENT NUMBER	X COORD	Y COORD	DATE	TIME	DAY	NO. INJ	NO. FAT	NO. PED	NO. VEH	FIRST HARMFUL EVENT	COLLISION TYPE	I-IR	WEATH COND	ROAD COND	LIGHT CONDITION	TRAFFIC CONTROLS
7400D2050701	0238	0838	7/02/74	2330	TUE	2			2	MV IN TRANS	REAR END	I	RAIN	WET	DARK,LIT	NO SIGNALS
74D103340584	0242	0846	7/16/74	1356	TUE	2			2	MV IN TRANS	ANGLE	I	CLEAR	DRY	DAYLIGHT	STOP SIGN

GRAND & REHBERG LN

ACCIDENT NUMBER	TYPE	NO.	****DRIVER**** AGE	SEX	ARREST	********CONTRIBUTING-CIRCUMSTANCES******** VISION	ROAD	MECH	POSS-VIOLATION	INTENT	BODY	TRAILER	VEH YR	DAMAGE
7400D2050701	VEH	1	17	M	YES	NOT OBSC	NO DEFECTS	NO	OTHER	GO STRAIGHT	PASS CAR	NO TRLR	69	DISABLING
	VEH	2	44	M	NO	NOT OBSC	NO DEFECTS	NO	NO APP. VIOL.	LEFT TURN	PASS CAR	NO TRLR	64	DISABLING
74D103340584	VEH	1	48	F	YES	NOT OBSC	NO DEFECTS	NO	NO APP. VIOL.	GO STRAIGHT	MBUS/VAN	NO TRLR	73	DISABLING
	VEH	2	17	M	NO	NOT OBSC	NO DEFECTS	NO	NO APP. VIOL.	GO STRAIGHT	MOT CYCLE	NO TRLR	74	DISABLING

----- THERE WERE 2 ACCIDENTS AT INTERSECTION GRAND & REHBERG LN

1 AVE S & S 27 ST

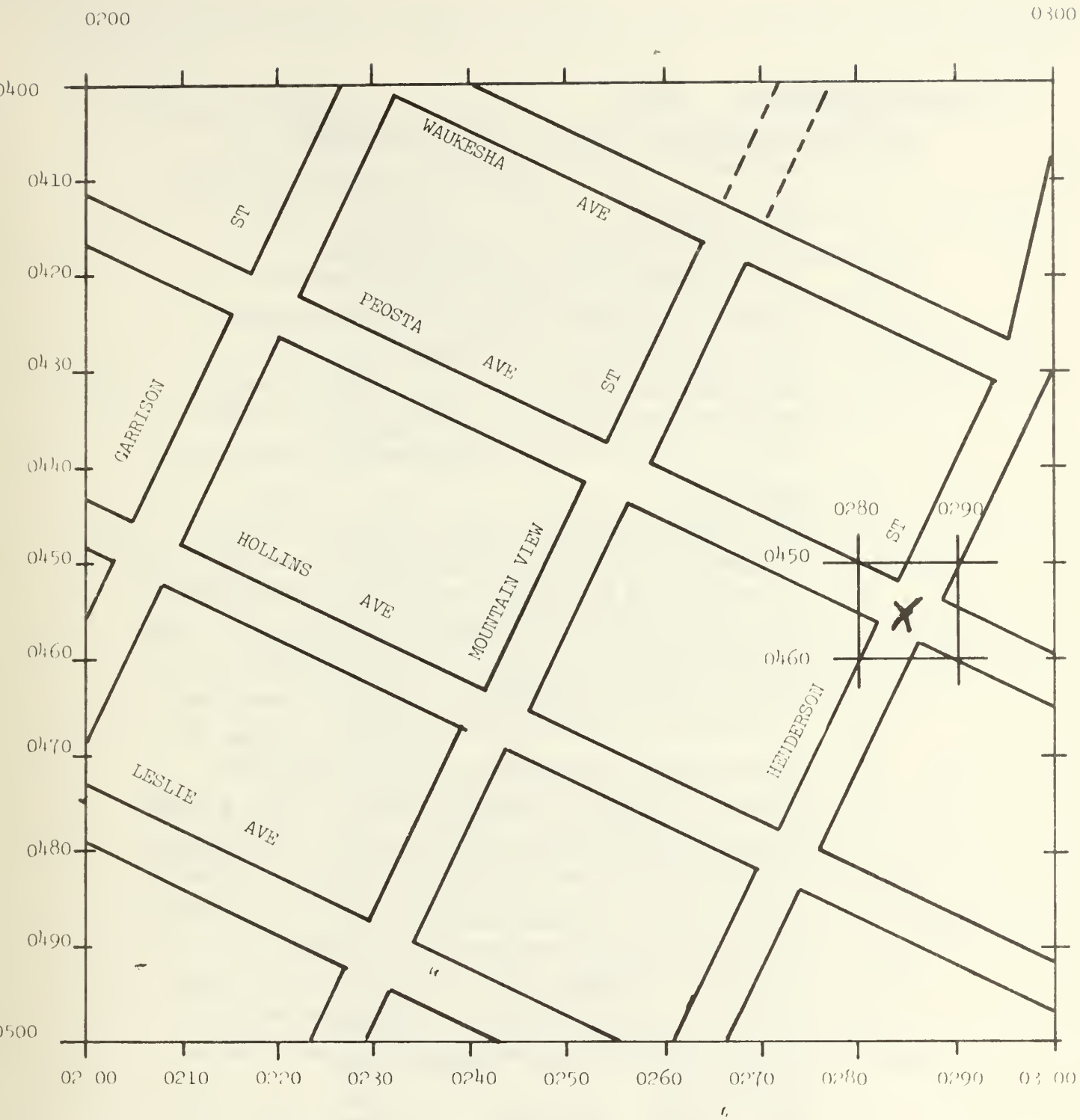
ACCIDENT NUMBER	X COORD	Y COORD	DATE	TIME	DAY	NO. INJ	NO. FAT	NO. PED	NO. VEH	FIRST HARMFUL EVENT	COLLISION TYPE	I-IR	WEATH COND	ROAD COND	LIGHT CONDITION	TRAFFIC CONTROLS
74010603D591	1185	0905	7/17/74	1733	WED				2	MV IN TRANS	ANGLE	I	CLEAR	DRY	DAYLIGHT	TRAFFIC SIGNAL
74D1D616D6D5	1185	0905	7/23/74	1800	TUE				2	MV IN TRANS	ANGLE	I	CLEAR	DRY	DAYLIGHT	TRAFFIC SIGNAL

1 AVE S & S 27 ST

ACCIDENT NUMBER	TYPE	NO.	****DRIVER**** AGE	SEX	ARREST	********CONTRIBUTING-CIRCUMSTANCES******** VISION	ROAD	MECH	POSS-VIOLATION	INTENT	BODY	TRAILER	VEH YR	DAMAGE
74D1C603D591	VEH	1	18	M	NO	NOT OBSC	NO DEFECTS	NO	FAIL YIELD ROW	LEFT TURN	PICKUP	NO TRLR	70	OTHER
	VEH	2	21	M	NO	NOT OBSC	NO DEFECTS	NO	NO APP. VIOL.	GO STRAIGHT	PASS CAR	NO TRLR	45	OTHER
74D1061606D5	VEH	1	42	M	NO	NOT OBSC	NO DEFECTS	NO	NO APP. VIOL.	GO STRAIGHT	MBUS/VAN	NO TRLR	73	OTHER
	VEH	2	28	M	NO	NOT OBSC	NO DEFECTS	NO	NO APP. VIOL.	GO STRAIGHT	TRUCK	NO TRLR	74	OTHER

----- THERE WERE 2 ACCIDENTS AT INTERSECTION 1 AVE S & S 27 ST

Figure 14 HIGH-ACC-INTERSECTNS Output



HIGHWAY				MILEPOST							
M	0	5	8	0	2	8	6	0	.	4	5	6

Figure 15 Helena City Map with Grid Marks

HIGH-ACC-INTERSECTNS (cont'd)

(c) Optional parameters - there are five listed below.

(1) ACCIDENTS - if the user wants the program to process only the accident records in which the Relationship to Junction parameter from the Montana Investigator's Accident Report was specified as intersection or intersection-related, then this should be specified. If the user desires all accidents to be scanned, this should be indicated. If this option is not specified, the program will assume that only intersection and intersection-related accidents are to be considered.

(2) #-ACCIDENTS, #-INTERSECTIONS - this is the option that specifies which of the two possible modes of output is desired. If #-ACCIDENTS is used, and is specified as 4, for instance, any intersection having four or more accidents within the confines of its SQUARE-SIZE will be listed. If #-INTERSECTIONS is used, and is specified as 10, for instance, the ten intersections having the highest number of accidents will be printed in the output. If neither of these is specified, then a third alternative must be used. The user, then, must indicate the name of the actual intersection, or intersections to be examined, and any accidents recorded as occurring at the specified intersection will be listed.

(3) START-DATE, END-DATE - (see page 6). If this optional parameter is not specified, the program assumes all recorded accidents for the total file history are to be processed.

(4) START-ACCIDENT, END-ACCIDENT - (see page 6, 7). If this option is not specified, no selection based on accident number is performed.

(5) SELECT - (see page 9). Stipulate special restrictions you would like to have imposed on the accident records to be processed.

HIGH-ACC-INTERSECTNS (cont'd)

(d) Since there are three basic ways the program can be used, we will illustrate each of these.

(1) In Sample 12 on page 54, we see an example of a typical request for an intersection analysis using the optional parameter #-ACCIDENTS. This request would list all the intersection in the City of Great Falls having five or more accidents during the first quarter of 1975 in which the accident report indicated the Relationship to Junction was intersection or intersection-related.

(2) In Sample 13 on page 55, we see an example of a typical request for an intersection analysis using the optional parameter #-INTERSECTIONS. This request would list the eight intersections in the City of Missoula having the highest number of accidents during the month of July 1974 in which the accident occurred during the evening rush hour time from 4:30 PM to 6:00 PM.

(3) In Sample 14 on page 56, we see an example of a typical request for an intersection analysis in which a particular intersection is to be examined. The request would list all the accidents at the intersection of Grand and 24th in Billings during the first six months of 1975 in which more than minor damage occurred. It is important to note that the names specified for the identification of the intersection must correspond exactly (including blanks) to names stored within the grid file for that city.

REQUEST FOR HIS ACCIDENT INFORMATION

TO: *Montana Highway Traffic Safety Division*
Capitol Station
Helena, Montana 59601

FROM: *Traffic Office*
Great Falls Police Department
Great Falls, Montana 59601

PROGRAM: *HIGH-ACC-INTERSECTNS*

REQUIRED PARAMETERS:

(a) CITY: *Great Falls*

(b) SQUARE SIZE: *15*

OPTIONAL PARAMETERS:

(a) ACCIDENTS: *Process intersection accidents only*

(b) "ACCIDENTS," "INTERSECTIONS": *List all intersections with 5 or more accidents*

(c) START DATE: *January 1, 1975*
END DATE: *March 31, 1975*

(d) START ACCIDENT: *none*
END ACCIDENT: *none*

(e) SPECIAL SELECT CONDITIONS: *none*

Sample 12

REQUEST FOR HIS ACCIDENT INFORMATION

TO: *Montana Highway Traffic Safety Division*
Capitol Station
Helena, Montana 59601

FROM: *Chief of Police*
Missoula Police Department
Missoula, Montana 59801

PROGRAM: *HIGH-ACC-INTERSECTNS*

REQUIRED PARAMETERS:

(a) CITY: *Missoula*

(b) SQUARE SIZE: *12*

OPTIONAL PARAMETERS:

(a) ACCIDENTS: *ALL*

(b) "ACCIDENTS, "INTERSECTIONS: *List the 8 intersections having the biggest number of accidents*

(c) START DATE: *July 1, 1974*
END DATE: *July 31, 1974*

(d) START ACCIDENT: *none*
END ACCIDENT: *none*

(e) SPECIAL SELECT CONDITIONS: *Limit the accident records considered to those occurring between 4:30 P.M. and 6:00 P.M.*

Sample 13

REQUEST FOR HIS ACCIDENT INFORMATION

TO: *Montana Highway Traffic Safety Division*
Capitol Station
Helena, Montana 59601

FROM: *City Engineer's Office*
City of Billings
Billings, Montana 59101

PROGRAM: *HIGH-ACC-INTERSECTNS*

REQUIRED PARAMETERS:

(a) CITY: *Billings*

(b) SQUARE SIZE: *10*

OPTIONAL PARAMETERS:

(a) ACCIDENTS: *ALL*

(b) #ACCIDENTS, #INTERSECTIONS: *none, List only those accidents occurring at the intersection of Grand and 24 St. W.*

(c) START DATE: *January 1, 1975*
END DATE: *January 30, 1975*

(d) START ACCIDENT: *none*
END ACCIDENT: *none*

(e) SPECIAL SELECT CONDITIONS: *Limit the accident reports considered to those for which the damage severity was reported as functional or disabling.*

Sample 14

It was mentioned earlier that there are two methods available for identifying high accident occurrence locations. Having now completed our discussion of the urban situation, HIGH-ACC-INTERSECTNS, we turn to the rural case.

The programs available for analyzing rural accidents have a two-fold purpose. First, they help to locate high accident occurrence locations by searching highways for clusters, and second, an analysis can be carried out, if desired, after the cluster is located.

RURAL-ACC-CLUSTERS

(a) Description - this is a program which searches along a stretch of rural highway seeking to establish high accident occurrence "locations" by looking for clusters. You as the user have the ability within the established program to define a "cluster" in any manner which suits your purposes. You simply adjust certain required parameters to:

(1) limit the length of roadway that you will accept as a "cluster" length, and

(2) define the number of accidents occurring within the specified length to establish it as a significant "cluster".

An example of a portion of the output is shown in Figure 16 on page 58.

MAY 15,1975

ROUTE NUMBER	MILEPOINT	ACCIDENT NUMBER	NO. FAT.	NO. INJ.	NO. LANES	DATE	HOUR	FIRST-HARMFUL-EVENT	TYPE-OF-COLLISION	ROAD SURFACE	DIST
P00008	002+0.000	740001460901			2	9/07/74	22	ANIMAL		DRY	0.000
P00008	002+0.100	720001601202			2	12/30/72	18	OVERTURNING		ICY	0.100
P00008	002+0.200	720001650611			2	6/24/72	16	FIXED OBJECT		WET	0.200
P00008	002+0.300	740003281101			2	11/01/74	20	OVERTURNING		WET	0.300
P00008	002+0.300	740003281203			2	12/06/74	21	OVERTURNING		ICY	0.300
P00008	002+0.600	730001650106		1	2	1/13/73	16	OVERTURNING		ICY	0.600
P00008	002+0.700	720001651108		5	2	11/26/72	21	MV IN TRANSPORT	ANGLE	ICY	0.700
P00008	002+0.700	730001650107			2	1/26/73	17	FIXED OBJECT		ICY	0.700
P00008	002+0.950	730001650108		1	2	1/26/73	13	MV IN TRANSPORT	HEAD ON	ICY	0.950
P00008	003+0.000	73R02802A004			2	2/19/73	15	MV IN TRANSPORT	SIDESWIPE--PASSING	DRY	1.000

-----> THERE WERE 10 ACCIDENTS IN THIS SECTION

P00008	026+0.700	720002760603			4	6/16/72	17	OVERTURNING		WET	0.000
P00008	027+0.100	72000185C803		1	4	8/06/72	06	MV IN TRANSPORT	REAR END	DRY	0.100
P00008	027+0.200	730001850201		1	4	2/01/73	16	OTHER NONCOLLISION		ICY	0.430
P00008	027+0.300	72000185C804			4	3/15/72	21	MV IN TRANSPORT	SIDESWIPE--PASSING	DRY	0.530
P00008	027+0.500	720002110204			2	2/13/72	16	PARKED MV	REAR END	ICY	0.730
P00008	027+0.600	72R02811A001			2	11/08/72	09	FIXED OBJECT		SNOWY	0.830
P00008	027+0.600	730001850708			2	7/19/73	14	OVERTURNING		DRY	0.830
P00008	027+0.610	73R00508A002			2	8/04/73	21	ANIMAL		DRY	0.840
P00008	027+0.610	74R00504A001			2	4/06/74	09	MV IN TRANSPORT	SIDESWIPE--MEETING	ICY	0.840
P00008	027+0.620	72R00508A002		1	2	8/14/72	12	OTHER NONCOLLISION			0.850
P00008	027+0.650	73R00507A002			2	7/07/73	12	FIXED OBJECT		DRY	0.880
P00008	027+0.650	74R00501A003			2	1/23/74	16	FIXED OBJECT		SNOWY	0.880

-----> THERE WERE 12 ACCIDENTS IN THIS SECTION

---

* P00008	027+0.600	72R02811A001			2	11/08/72	09	FIXED OBJECT		SNOWY	0.000
* P00008	027+0.600	730001850708			2	7/19/73	14	OVERTURNING		DRY	0.000
* P00008	027+0.610	73R00508A002			2	8/04/73	21	ANIMAL		DRY	0.010
* P00008	027+0.610	74R00504A001			2	4/06/74	09	MV IN TRANSPORT	SIDESWIPE--MEETING	ICY	0.010
* P00008	027+0.620	72R00508A002		1	2	8/14/72	12	OTHER NONCOLLISION			0.020
* P00008	027+0.650	73R00507A002			2	7/07/73	12	FIXED OBJECT		DRY	0.050
* P00008	027+0.650	74R00501A003			2	1/23/74	16	FIXED OBJECT		SNOWY	0.050
P00008	027+0.820	72R00503A001			2	3/02/72	16	MV IN TRANSPORT	HEAD ON	ICY	0.220
P00008	028+0.000	740002880802			2	8/19/74	01	FIXED OBJECT		DRY	0.394
P00008	028+0.600	740002880404		?	2	4/25/74	19	FIXED OBJECT		DRY	0.994

* THIS ACCIDENT WAS ALSO PRINTED IN THE PRECEDING CLUSTER

-----> THERE WERE 13 ACCIDENTS IN THIS SECTION

Figure 16 RURAL-ACC-CLUSTERS Output

RURAL-ACC-CLUSTERS (cont'd)

(b) Required parameters - there are three listed below.

(1) LENGTH - the required parameter LENGTH must be supplied for the successful use of the program. It defines the length of readway which will be used in determining the cluster length. If LENGTH is defined as one half a mile, for instance, then accidents occurring within successive half mile lengths will be given consideration for potentially being clusters. LENGTH should be specified in miles or decimal fractions of miles.

(2) #-ACCIDENTS - this required parameter is necessary for the successful use of the program and defines the minimum number of accidents occurring within the specified LENGTH to define a cluster. If #-ACCIDENTS is defined as 8, for instance, then only groupings of eight or more accidents occurring within the specified LENGTH are reported as being "clusters".

(3) DATA (see page 2). The portion of the Federal Aid system to be scanned must be specified. The options are the Interstate system, the Primary system, the Secondary system, the Interstate plus the Primary systems, or the total Federal Aid system. A specific federal aid route can be designated by listing the route number after the system designation. For instance, designating Federal Aid Interstate 15, would cause the program to scan the full length of I 15 for rural accident clusters.

RURAL-ACC-CLUSTERS (cont'd)

(c) Optional parameters - there are five listed below.

(1) START-MILEPOINT, END-MILEPOINT (see page 3). If this option is used, a specific length of a particular federal aid highway will be scanned for clusters. If this option is not specified, processing will be performed on a system or total route basis only.

(2) LOCATION, CITY, COUNTY (see page 3). If this option is not specified, the program will assume all recorded accidents for the entire state of Montana are to be processed.

(3) START-DATE, END-DATE (see page 6). If this option is not specified, the program assumes all recorded accidents for the total file history are to be processed.

(4) START-ACCIDENT, END-ACCIDENT (see page 6, 7). If this option is not specified, no selection based on accident number is performed.

(5) SELECT (see page 9). Stipulate special restrictions you would like to impose on the accident records to be processed.

(d) In Sample 15 on page 61, we see an example of a typical request that a user might send to the Montana Highway Traffic Safety Division.

This request would search a stretch of Federal Aid Primary 10 (US 87) from the outskirts of Great Falls to the intersection of FAP 10 with US 2 just west of Havre, for clusters of legally reportable accidents where at least 8 accidents occurred within a length of 0.20 miles.

REQUEST FOR HIS ACCIDENT INFORMATION

TO: *Montana Highway Traffic Safety Division*
Capitol Station
Helena, Montana 59601

FROM: *Montana Highway Patrol*
Hustad Center
Helena, Montana 59601

PROGRAM: *RURAL-ACC-CLUSTERS*

REQUIRED PARAMETERS:

(a) LENGTH: *Two tenths of a mile*

(b) ~~XX~~ACCIDENTS: *8*

(c) DATA: *U.S. 87 (Federal Aid Primary 10)*

OPTIONAL PARAMETERS:

(a) START MILEPOINT: *Milepost 4*
END MILEPOINT: *Milepost 111*

(b) LOCATION: *none*
CITY: *none*
COUNTY: *none*

(c) START DATE: *January 1, 1975*
END DATE: *June 30, 1975*

(d) START ACCIDENT: *none*
END ACCIDENT: *none*

(e) SPECIAL SELECT CONDITIONS: *Restrict the accidents processed to those which were legally reportable.*

Sample 15

RURAL-ACC-ANALYSIS

(a) Description - this is a program which is used to explore in depth the nature of the characteristics of the accidents along a stretch of highway. This might possibly be a cluster previously identified by RURAL-ACC-CLUSTERS.

The summary is printed in three parts.

(1) A plot of the accident locations along a linear scale representing the stretch of roadway, and a physical description of the actual roadway character. An example of this portion of the output is shown in Figure 17 on page 63.

(2) A tabulation of the average daily traffic rate, the accident rate, and certain other accident totals for the stretch of roadway between the beginning and ending milepoints specified. An example of this portion of the output is shown in Figure 18 on page 64.

(3) A summary describing the accident and vehicle details for each accident occurring on the specified stretch of roadway. Figure 19 on page 65 is an example of a part of the accident list by milepoint location. Figure 20 on page 66 is a portion of the output giving accident details and listed by the accident identification number.

```
 ACCIDENT ANALYSIS BEGINS AT MILEPOST 000+0.000
    SCALE =   0.885 MILES PER LINE
*      00|<---000+0.434   POWELL COUNTY                    BUILT 1931,    2 LANES, 12 FT. LANE, UNDIVIDED
  X000000|                                                   FT. SHOULDERS, MIXED BITUMINOUS ROAD SURFACE,
    00X0X|
*    X0XX|<---003+0.914   POWELL COUNTY                    BUILT 1957,    2 LANES, 16 FT. LANE, UNDIVIDED
       0|                                                   FT. SHOULDERS, MIXED BITUMINOUS ROAD SURFACE,
       XX|
        0|
      X00|
  000=0X0|
       XX|
      000|
      000|<---011+0.267   POWELL COUNTY                    BUILT 1933,    2 LANES, 11 FT. LANE, UNDIVIDED
      0X0|                                                  1 FT. SHOULDERS, MIXED BITUMINOUS ROAD SURFACE,
*   X000X|<---013+0.007 JCT FAS 272 POWELL CO              BUILT 1933,    2 LANES,  9 FT. LANE, UNDIVIDED
      0XX0|                                                 3 FT. SHOULDERS, MIXED BITUMINOUS ROAD SURFACE,
*       0|<---014+0.357   POWELL COUNTY                    BUILT 1933,    2 LANES, 10 FT. LANE, UNDIVIDED
      X0X|                                                  3 FT. SHOULDERS, MIXED BITUMINOUS ROAD SURFACE,
*     0XX|<---016+0.066   POWELL COUNTY                    BUILT 1933,    2 LANES, 11 FT. LANE, UNDIVIDED
     XXXX|                                                  1 FT. SHOULDERS, MIXED BITUMINOUS ROAD SURFACE,
*     XX0|<---018+0.260   POWELL COUNTY                    BUILT 1933,    2 LANES, 11 FT. LANE, UNDIVIDED
     00X0|                                                  1 FT. SHOULDERS, MIXED BITUMINOUS ROAD SURFACE,
*       0|<---020+0.362   POWELL COUNTY                    BUILT 1933,    2 LANES,  9 FT. LANE, UNDIVIDED
      - F|                                                  3 FT. SHOULDERS, MIXED BITUMINOUS ROAD SURFACE,
       XX|<---021+0.307   POWELL COUNTY                    BUILT 1933,    2 LANES, 11 FT. LANE, UNDIVIDED
      X00|                                                  1 FT. SHOULDERS, MIXED BITUMINOUS ROAD SURFACE,
      X00|<---023+0.218 BEG FH 28 POWELL CO               BUILT 1973,    4 LANES, 14 FT. LANE, UNDIVIDED
       0X|                                                   FT. SHOULDERS, MIXED BITUMINOUS ROAD SURFACE,
     X000|<---025+0.581 BEG 4LNU POWELL CO                BUILT 1973,    4 LANES, 14 FT. LANE, UNDIVIDED
     XXXX|                                                   FT. SHOULDERS, MIXED BITUMINOUS ROAD SURFACE,
*   00XX0|<---027+0.319 END 4LN POWELL COUNTY             BUILT 1931,    2 LANES, 12 FT. LANE, UNDIVIDED
C0000X000|                                                  3 FT. SHOULDERS, MIXED BITUMINOUS ROAD SURFACE,
    0X00X|<---027+0.617 POWELL CO LN LEWIS & CLARK CO     BUILT 1931,    2 LANES, 12 FT. LANE, UNDIVIDED
  0XXXXXX|                                                  3 FT. SHOULDERS, MIXED BITUMINOUS ROAD SURFACE,
*       0X|<---030+0.573   LEWIS & CLARK COUNTY           BUILT 1932,    2 LANES, 12 FT. LANE, UNDIVIDED
  XCCXXX0|                                                  3 FT. SHOULDERS, MIXED BITUMINOUS ROAD SURFACE,
*      00|<---032+0.412   LEWIS AND CLARK COUNTY          BUILT 1932,    2 LANES, 12 FT. LANE, UNDIVIDED
    C00X0|                                                  3 FT. SHOULDERS, MIXED BITUMINOUS ROAD SURFACE,
*0DXXXOX0|<---034+0.301 END FH 28 LEWIS & CLARK CO        BUILT 1933,    2 LANES, 10 FT. LANE, UNDIVIDED
    X00X0|                                                  2 FT. SHOULDERS, MIXED BITUMINOUS ROAD SURFACE,
       XC|<---035+0.415   LEWIS AND CLARK COUNTY          BUILT 1933,    2 LANES, 10 FT. LANE, UNDIVIDED
       X0|                                                  5 FT. SHOULDERS, MIXED BITUMINOUS ROAD SURFACE,
      000|<---036+0.877   LEWIS AND CLARK COUNTY          BUILT 1933,    2 LANES, 11 FT. LANE, UNDIVIDED
    C000X|                                                  4 FT. SHOULDERS, MIXED BITUMINOUS ROAD SURFACE,
* 00X00X0|<---039+0.654 ENT HELENA URBAN EXT              BUILT 1933,    2 LANES, 10 FT. LANE, UNDIVIDED
       0|                                                   5 FT. SHOULDERS, MIXED BITUMINOUS ROAD SURFACE,
 MILEPOST C40+0.000

F = FATALITY  X = INJURY  0 = PROPERTY DAMAGE ONLY
*  INDICATES THAT ADDITIONAL PHYSICALDESCRIPTIONS OF THE ROAD ARE STORED IN THE ROADLOG FILE
```


Figure 17 RURAL-ACC-ANALYSIS Output

**** THE AVERAGE DIALY TRAFFIC (ADT) BETWEEN MILEPOINTS P00008000+0.000 & P00008040+0.000 ****

DURING 1972 THE AVERAGE DAILY TRAFFIC (ADT) ON THIS ACCIDENT SECTION WAS 1357

DURING 1973 THE AVERAGE DAILY TRAFFIC (ADT) ON THIS ACCIDENT SECTION WAS 1406

DURING 1974 THE AVERAGE DAILY TRAFFIC (ADT) ON THIS ACCIDENT SECTION WAS 1328

THE WEIGHTED ANNUAL AVERAGE DAILY TRAFFIC(ADT) FOR THE ACCIDENT SECTION IS 1364

THE AVERAGE VEHICLE MILEAGE FOR THE ACCIDENT SECTION IS 54343

THE ACCIDENT RATE BASED ON THE AVERAGE ADT AND THE NUMBER ACCIDENTS OCCURRING ON THE ACCIDENT SECTION BETWEEN P00008000+0.000 & P00008040+0.000 IS 2.77

THE NUMBER OF ACCIDENTS IN THIS SECTION IS 165

THE NUMBER OF FATAL ACCIDENTS IN THIS SECTION IS 2

THE NUMBER OF FATALITIES IN THIS SECTION IS 2

THE NUMBER OF INJURY ACCIDENTS IN THIS SECTION IS 60

THE NUMBER OF INJURIES IN THIS SECTION IS 100

THE ACCIDENT SEVERITY FOR THIS SECTION IS *** 1.458 ***

Figure 18 RURAL-ACC-ANALYSIS Output

***** ACCIDENT LOCATIONS *****

REFERENCE POST	ACCIDENT NO.	TIME	DATE	DAY OF WEEK	CLASS OF TRAFFICWAY	JUNCTION RELATED	ROADWAY RELATED	WAS AN ENGINEERING STUDY REQUESTED?
P008001+0.500	72R02811A004	16:15	11/26/72	SUN	U.S. NUMBERED ROUTE	NON-JUNC	ON ROAD	NO
P008001+0.500	74R02812A001	:00	12/01/74	SUN	U.S. NUMBERED ROUTE	NON-JUNC	ON ROAD	NO
P008001+0.800	73RC2809A001	10:00	9/30/73	SUN	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008002+0.000	740001460901	22:50	9/07/74	SAT	U.S. NUMBERED ROUTE	NON-JUNC	ON ROAD	NO
P008002+0.100	720001601202	18:00	12/30/72	SAT	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008002+0.200	720001650611	16:45	6/24/72	SAT	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008002+0.300	740003281101	20:30	11/01/74	FRI	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008002+0.300	740003281203	21:50	12/06/74	FRI	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008002+0.600	730001650106	16:00	1/13/73	SAT	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008002+0.700	720001651108	21:00	11/26/72	SUN	U.S. NUMBERED ROUTE	NON-JUNC	ON ROAD	NO
P008002+0.700	730001650107	17:50	1/26/73	FRI	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008002+0.950	730001650108	18:00	1/26/73	FRI	U.S. NUMBERED ROUTE	NON-JUNC	ON ROAD	NO
P008003+0.000	73R02802A004	15:00	2/19/73	MON	U.S. NUMBERED ROUTE	INTERSECT-REL	ON ROAD	NO
P008003+0.060	720002390103	9:30	1/21/72	FRI	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008003+0.600	720001651104	5:15	11/24/72	FRI	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008003+0.600	720001651106	8:30	11/24/72	FRI	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008003+0.900	720002390901	21:30	9/01/72	FRI	U.S. NUMBERED ROUTE	NON-JUNC	ON ROAD	NO
P008004+0.200	740002761102	2:30	11/05/74	TUE	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008005+0.300	730001650403	9:30	4/02/73	MON	U.S. NUMBERED ROUTE	NON-JUNC	ON ROAD	NO
P008005+0.400	740001571003	18:15	10/22/74	TUE	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008006+0.000	720002390502	17:00	5/13/72	SAT	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008006+0.700	740002190701	11:45	7/04/74	THU	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008007+0.200	740001600102	19:30	1/16/74	WED	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008007+0.400	740002191103	3:45	11/28/74	THU	U.S. NUMBERED ROUTE	NON-JUNC	ON ROAD	NO
P008007+0.500	730002760302	12:45	3/11/73	SUN	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008008+0.000	72R02811A005	16:00	11/27/72	MON	U.S. NUMBERED ROUTE	NON-JUNC	ON ROAD	NO
P008008+0.070	73R02807A003	4:30	7/08/73	SUN	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008008+0.100	730001731204	23:20	12/28/73	FRI	U.S. NUMBERED ROUTE	INTERSECT-REL	ON ROAD	NO
P008008+0.500	740003070603	18:35	6/10/74	MON	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008008+0.600	720002390505	2:00	5/21/72	SUN	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008008+0.700	720001731204	1:45	12/16/72	SAT	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008008+0.700	720002390803	16:15	8/16/72	WED	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008009+0.200	720002391002	2:00	10/14/72	SAT	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008009+0.400	720001650101	8:50	1/10/72	MON	U.S. NUMBERED ROUTE	NON-JUNC	ON ROAD	NO
P008009+0.990	720001651103	18:00	11/16/72	THU	U.S. NUMBERED ROUTE	NON-JUNC	ON ROAD	NO
P008010+0.020	72R02801A001	18:35	1/08/72	SAT	U.S. NUMBERED ROUTE	NON-JUNC	ON ROAD	NO
P008010+0.070	73R02806A059	22:30	6/24/73	SUN	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008011+0.070	73R02807A005	10:30	7/29/73	SUN	U.S. NUMBERED ROUTE	INTERSECT-REL	ON ROAD	NO
P008011+0.300	720001601201	15:30	12/17/72	SUN	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008011+0.400	730001650504	15:00	5/27/73	SUN	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008011+0.600	730002830803	:24	8/09/73	THU	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008011+0.900	740002190808	2:20	8/22/74	THU	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008012+0.000	73RC2807A001	21:00	7/02/73	MON	U.S. NUMBERED ROUTE	NON-JUNC	ON ROAD	NO
P008012+0.720	720001650607	11:40	6/18/72	SUN	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008013+0.000	74R02812A002	18:20	12/06/74	FRI	U.S. NUMBERED ROUTE	NON-JUNC	ON ROAD	NO
P008013+0.006	730001600702	20:00	7/03/73	TUE	U.S. NUMBERED ROUTE	INTERSECT-REL	ON ROAD	NO
P008013+0.009	730001600705	9:15	7/11/73	WED	U.S. NUMBERED ROUTE	NON-JUNC	ON ROAD	NO
P008013+0.020	720002390602	6:30	6/07/72	WED	U.S. NUMBERED ROUTE	INTERSECT	ON ROAD	NO
P008013+0.500	720002390506	23:00	5/23/72	TUE	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008013+0.800	720001651205	18:30	12/17/72	SUN	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008013+0.800	730001251101	13:15	11/08/73	THU	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008014+0.010	730001600101	9:30	1/02/73	TUE	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO
P008014+0.400	720002390308	20:00	3/26/72	SUN	U.S. NUMBERED ROUTE	NON-JUNC	OFF ROAD	NO

(65)

Figure 19 RURAL-ACC-ANALYSIS Output

***** ACCIDENT DETAILS *****

ACCIDENT NO.	FIRST HARMFUL EVENT	FIRST OBJECT HIT	WEATH COND	ROAD COND	LIGHT COND	TRAFFIC CONTROLS	COLLISION TYPE	INJURY SEVERITY
72R02811A004	MV IN TRANS	NO OBJECT HIT	OTHER	ICY	DAYLIGHT	NO SIGNALS	REAR END	NO INJURY
74R02812A001	MV IN TRANS	NO OBJECT HIT	CLEAR	DRY	DARK,UNLIT	NO SIGNALS	SIDE MEET	NO INJURY
73R02809A001	FIXED OBJCT	LIGHT/POWER POLE GUARDRAIL	CLEAR	DRY	DAYLIGHT	NO SIGNALS	OTHER	NO INJURY
740001460901	ANIMAL	NO OBJECT HIT	CLEAR	DRY	DARK,UNLIT	NO SIGNALS	OTHER	NO INJURY
720001631202	OVERTURNED	NO OBJECT HIT	SNOW	ICY	DARK,UNLIT	PAVEMENT MARKINGS	OTHER	NO INJURY
720001650611	FIXED OBJCT	OTHER OBJECT	RAIN	WET	DAYLIGHT	OTHER REGULATORY SIGN	OTHER	NO INJURY
740003281101	OVERTURNED	NO OBJECT HIT	RAIN	WET	DARK,LIT	PAVEMENT MARKINGS	OTHER	NO INJURY
740003281203	OVERTURNED	NO OBJECT HIT	SNOW	ICY	DARK,UNLIT	PAVEMENT MARKINGS	OTHER	NO INJURY
730001650106	OVERTURNED	NO OBJECT HIT	CLEAR	ICY	DARK,UNLIT	OTHER REGULATORY SIGN	OTHER	NON-INCAP.
720001651108	MV IN TRANS	NO OBJECT HIT	SNOW	ICY	DARK,UNLIT	OTHER REGULATORY SIGN	ANGLE	NON-INCAP.
730001650107	FIXED OBJCT	ROCK/BOULDER	CLEAR	ICY	DAWN/DUSK	OTHER REGULATORY SIGN	OTHER	NO INJURY
730001650108	MV IN TRANS	NO OBJECT HIT	CLEAR	ICY	DARK,UNLIT	OTHER REGULATORY SIGN	HEAD ON	POSS. INJ
73R02802A004	MV IN TRANS	OTHER OBJECT	CLEAR	DRY	DAYLIGHT	NO SIGNALS	SIDE PASS	NO INJURY
720002390103	OVERTURNED	NO OBJECT HIT	CLEAR	ICY	DAYLIGHT	NO SIGNALS	OTHER	NO INJURY
720001651104	OVERTURNED	CUT SLOPE	SNOW	SNOWY	DARK,UNLIT	OTHER REGULATORY SIGN	OTHER	POSS. INJ
720001651106	FIXED OBJCT	ROCK/BOULDER	CLEAR	SNOWY	DAYLIGHT	OTHER REGULATORY SIGN	OTHER	INCAP. INJ
720002390901	MV IN TRANS	NO OBJECT HIT	CLEAR	DRY	DARK,UNLIT	NO SIGNALS	SIDE MEET	NO INJURY
740002761102	OVERTURNED	NO OBJECT HIT	CLEAR	DRY	DARK,UNLIT	NO SIGNALS	OTHER	INCAP. INJ
730001650403	OTHER OBJCT	ROCK/BOULDER	CLEAR	WET	DAYLIGHT	OTHER REGULATORY SIGN	OTHER	NO INJURY
740001571003	FIXED OBJCT	CUT SLOPE	CLEAR	DRY	DAYLIGHT	PAVEMENT MARKINGS	OTHER	NON-INCAP.
720002390502	FIXED OBJCT	ROCK/BOULDER	CLEAR	DRY	DAYLIGHT	NO SIGNALS	OTHER	NON-INCAP.
740002190701	FIXED OBJCT	ROCK/BOULDER	CLEAR	DRY	DAYLIGHT	OTHER REGULATORY SIGN	OTHER	NO INJURY
740001600102	OVERTURNED	NO OBJECT HIT	CLEAR	DRY	DARK,UNLIT	PAVEMENT MARKINGS	OTHER	NO INJURY
740002191103	MV IN TRANS	NO OBJECT HIT	CLEAR	ICY	DARK,UNLIT	OTHER REGULATORY SIGN	SIDE MEET	NO INJURY
730002760302	OVERTURNED	ROCK/BOULDER	CLEAR	OTHER	DAYLIGHT	NO SIGNALS	OTHER	INCAP. INJ
72R02811A005	MV IN TRANS	NO OBJECT HIT	SNOW	ICY	DAYLIGHT	NO SIGNALS	REAR END	NO INJURY
73R02807A003	OVERTURNED	OTHER OBJECT	CLEAR	DRY	DARK,UNLIT	NO SIGNALS	OTHER	NON-INCAP.
730001731204	OTHER OBJCT	NO OBJECT HIT	SNOW	ICY	DARK,UNLIT	NO SIGNALS	REAR END	NO INJURY
740003C70603	OVERTURNED	ROCK/BOULDER	CLEAR	DRY	DAYLIGHT	PAVEMENT MARKINGS	OTHER	FATAL INJ
720002390505	OVERTURNED	NO OBJECT HIT	CLEAR	DRY	DARK,UNLIT	NO SIGNALS	OTHER	NO INJURY
720001731204	OTHER OBJCT	ROCK/BOULDER	OTHER	DRY	DARK,UNLIT	NO SIGNALS	OTHER	NO INJURY
720002390803	FIXED OBJCT	ROCK/BOULDER	CLEAR	DRY	DAYLIGHT	WARNING SIGN	OTHER	NO INJURY
720002391002	FIXED OBJCT	CUT SLOPE	CLEAR	DRY	DARK,UNLIT	WARNING SIGN	OTHER	INCAP. INJ
720001650101	MV IN TRANS	NO OBJECT HIT	SNOW	SNOWY	DAYLIGHT	OTHER REGULATORY SIGN	HEAD ON	NON-INCAP.
720001651103	ANIMAL	NO OBJECT HIT	CLEAR	DRY	DARK,UNLIT	OTHER REGULATORY SIGN	OTHER	NO INJURY
72R02801A001	MV IN TRANS	NO OBJECT HIT	CLEAR	DRY	DARK,UNLIT	NO SIGNALS	REAR END	NO INJURY
73R02806AC59	FIXED OBJCT	FENCE	CLEAR	DRY	DARK,UNLIT	NO SIGNALS	OTHER	NO INJURY
73R02807A005	MV IN TRANS	OTHER OBJECT	CLEAR	DRY	DAYLIGHT	NO SIGNALS	SIDE PASS	NO INJURY
720001631201	FIXED OBJCT	CUT SLOPE	RAIN	ICY	DAYLIGHT	PAVEMENT MARKINGS	OTHER	NO INJURY
730001650504	FIXED OBJCT	ROCK/BOULDER	CLEAR	DRY	DAYLIGHT	OTHER REGULATORY SIGN	OTHER	NO INJURY
730002880303	OTHER OBJCT	CUT SLOPE	CLEAR	DRY	DARK,UNLIT	NO SIGNALS	OTHER	NO INJURY
740002191308	FIXED OBJCT	OVERPASS RAILING/SIDE	CLEAR	DRY	DARK,UNLIT	OTHER REGULATORY SIGN	OTHER	NON-INCAP.
73R02807A001	ANIMAL	NO OBJECT HIT	CLEAR	DRY	DAYLIGHT	NO SIGNALS	OTHER	NO INJURY
720001650607	FIXED OBJCT	OVERPASS GUARDRAIL	RAIN	WET	DAYLIGHT	WARNING SIGN	OTHER	INCAP. INJ
74R02812A002	MV IN TRANS	NO OBJECT HIT	SNOW	SNOWY	DARK,UNLIT	NO SIGNALS	REAR END	NO INJURY
730001600702	MV IN TRANS	NO OBJECT HIT	CLEAR	DRY	DAYLIGHT	PAVEMENT MARKINGS	REAR END	NO INJURY
730001600705	MV IN TRANS	NO OBJECT HIT	CLEAR	DRY	DAYLIGHT	PAVEMENT MARKINGS	REAR END	NO INJURY
720002390602	MV IN TRANS	NO OBJECT HIT	CLEAR	DRY	DAYLIGHT	PAVEMENT MARKINGS	HEAD ON	INCAP. INJ
720002390506	OVERTURNED	NO OBJECT HIT	CLEAR	DRY	DARK,UNLIT	NO SIGNALS	OTHER	NO INJURY
720001651205	OVERTURNED	NO OBJECT HIT	CLEAR	ICY	DARK,UNLIT	OTHER REGULATORY SIGN	OTHER	INCAP. INJ
730001251101	FIXED OBJCT	END OF OVERPASS/RIVER CROSS	OTHER	SNOWY	DAYLIGHT	NO SIGNALS	OTHER	POSS. INJ
730001600101	OVERTURNED	NO OBJECT HIT	SNOW	SNOWY	DAYLIGHT	PAVEMENT MARKINGS	OTHER	NO INJURY
720002390308	OVERTURNED	NO OBJECT HIT	SNOW	ICY	DARK,UNLIT	NO SIGNALS	OTHER	NO INJURY

Figure 20 RURAL-ACC-ANALYSIS Output

RURAL-ACC-ANALYSIS (cont'd)

(b) Required parameters - there are two listed below.

(1) DATA - (see page 2). The portion of the Federal aid route to be scanned must be specified. The options are: an interstate plus route number, a primary plus route number, a secondary plus route number, or an urban plus route number.

(2) START-MILEPOINT, END-MILEPOINT (see page 3). The beginning and ending milepoints for the stretch of roadway to be analyzed must be specified. For instance, if DATA were Federal Aid Interstate 90, START-MILEPOINT were 278, and END-MILEPOINT were 306, an analysis of accidents along a stretch of I 90 from Three Forks to Bozeman would be produced.

(c) Optional parameters - there is one.

(1) START-DATE, END-DATE (see page 6). If this option is not specified, the program assumes all recorded accidents for total file history are to be processed.

(d) In Sample 16 on page 68, we see an example of a typical request that a user might send to Montana Highway Traffic Safety Division.

This request would provide an analysis of all accidents occurring along a 28 mile stretch of Federal Aid Primary 1 (US 2) from Libby city limits to Manicke Junction for the four winter months of 1974-75.

REQUEST FOR HIS ACCIDENT INFORMATION

TO: *Montana Highway Traffic Safety Division*
Capitol Station
Helena, Montana 59601

FROM: *Montana Department of Highways*
Helena, Montana 59601

PROGRAM: *RURAL - ACC - ANALYSIS*

REQUIRED PARAMETERS:

(a) DATA: *U.S. 2 (Federal Aid Primary 1)*

(b) START MILEPOINT: *Milepost 32*
END MILEPOINT: *Milepost 60*

OPTIONAL PARAMETERS:

(a) START DATE: *December 1, 1974*
END DATE: *March 31, 1975*

Sample 16

SUM-BY-INTERSECTIONS

(a) Description - This program provides the opportunity to carry out an analysis of intersection accidents within a city for which a grid table has previously been established and for which accident locations have been indicated by the use of the Route Number system of locating accidents. There are two ways the analysis can be performed.

(1) The program can be requested to list the top "N" locations, where for example if "N" were 5, the program would list the five intersections having the most accidents.

(2) The program can be requested to list all intersections with "N" or more accidents, where for example if "N" were 3, the program would list all the intersections having at least three accidents.

(b) Required parameters - there is one.

(1) CITY - The user must include the name of the city for which the intersection analysis is to be performed.

(c) Optional parameters - there are seven listed below.

(1) ACCIDENTS - If the user wants the program to process only the accident records in which the Relationship to Junction parameter from the Montana Investigator's Accident Report was specified as intersection or intersection-related, then this should be specified. If the user desires all accidents to be scanned, this should be indicated. If this option is not specified, the program will assume that only intersection and intersection-related accidents are to be considered.

(2) #-ACCIDENTS, #-INTERSECTIONS - This is the option that specifies which of the two possible modes of output is desired. If #-ACCIDENTS is used, and is specified as 4, for instance, any intersection having four or more accidents within the confines of its SQUARE-SIZE will be listed. If #-INTERSECTIONS is used, and is specified

SUM-BY-INTERSECTIONS (cont'd)

as 10, for instance, the ten intersections having the highest number of accidents will be printed in the output. If neither of these is specified, then a third alternative must be used. The user, then, must indicate the name of the actual intersection, or intersections to be examined, and any accidents recorded as occurring at the specified intersection will be listed.

(3) START-DATE, END-DATE - (see page 6) If this optional parameter is not specified, the program assumes all recorded accidents for the total file history are to be processed.

(4) START-ACCIDENT, END-ACCIDENT - (see pages 6, 7) If this option is not specified, no selection based on accident number if performed.

(5) STREET - When you use this parameter, you must designate a four digit route location number for the street for which you desire a listing. A listing of the route location numbers for each street in a particular city may be obtained from the Montana Highway Patrol Bureau in Helena. This routine will select for listing only those accidents which occurred on the designated street. If this parameter is not specified, no selection on the basis of streets will be performed.

(6) START-STREET, END-STREET - These parameters can be used to select accidents for a segment of a street. If option (5) above has been specified, this parameter permits the user to list only those accidents along a particular stretch of the designated street. It requires the coding of the appropriate four digit street numbers for the START-STREET and the END-STREET (see page 41.1).

(7) SELECT - (see page 9) Stipulate special restrictions you would like to have imposed on the accident records to be processed.

SUM-BY-INTERSECTIONS (cont'd)

(d) In Sample 16 on page 68.4 we see an example of a typical request which a user might send to the Montana Highway Traffic Safety Division.

This request would list all the intersections along 17th Avenue South starting at 13th Street South and ending at 19th Street South that had at least two accidents during 1977.

(e) The output from SUM-BY-INTERSECTIONS is in the same format as the HIGH-ACC-INTSECTNS report illustrated on page 50.

REQUEST FOR HIS ACCIDENT INFORMATION

TO: *Montana Highway Traffic Safety Division*
Capitol Station
Helena, MT. 59601

FROM: *City Engineer's Office*
Great Falls, MT.

PROGRAM: *SUM-BY-INTERSECTIONS*

REQUIRED PARAMETERS:

(a) **CITY:** *Great Falls, MT.*

OPTIONAL PARAMETERS:

(a) **ACCIDENTS:** *All*

(b) **#ACCIDENTS,#INTERSECTIONS:** *List all the intersections with 2 or more accidents.*

(c) **START-DATE:** *April 1,1977*
END-DATE: *December 31,1977*

(d) **START-ACCIDENT:** *none*
END-ACCIDENT: *none*

(e) **STREET:** *17th Avenue So 0232*

(f) **START-STREET:** *13th Street So 0388*
END-STREET: *19th Street So 0394*

(g) **SPECIAL SELECT CONDITIONS:** *none*

SAMPLE 16

Appendix A

THE MONTANA INVESTIGATOR'S ACCIDENT REPORT

Since all of the information which is stored in the Accident file is originally a part of the data submitted on the Montana Investigator's Accident Report, it seems appropriate to include enough information about the report so that the user of this manual, which relates to the problem of extracting information from the Accident file, will understand the source document.

In Figure 21 on page 70, the top two thirds of the Accident Report is shown. The bottom one third duplicates the middle third and provides reporting space for a second vehicle or pedestrian.

The symbols on the figure refer to the items listed on page 71 and 72 which are the index pages of a manual that is available through the Montana Highway Traffic Safety Division. The manual provides a detailed explanation of each of the items on the accident report.

Finally, on page 73, there is a reproduction of the code information sheet which accompanies each set of three report forms to make up an accident report package, and provides a brief list of the coding options available to the investigating officer as he completes the report.

STATE OF MONTANA — INVESTIGAORS' ACCIDENT REPORT

DATE OF ACCIDENT I-1 | TIME I-2 | CITY I-3 | COUNTY I-4 | ACCIDENT NO I-5

OCCURRED ON (Route Number or Name) I-6-a | AT INTERSECTION OF (Route Number or Name) I-6-b | MILES N S E W OF I-6-c

IF NOT AT INTERSECTION FEET MILES N S E W OF (Intersection, highway, street, landmark) I-6-d | HIGHWAY I-7 | MILEPOST

FIRST HARMFUL EVENT (Code One)	II-A-1	NUMBER OF VEHICLES	II-B-1
FIRST OBJECT HIT OFF ROADWAY (Code One)	II-A-2	NUMBER OF PEDESTRIANS	II-B-2
INJURY SEVERITY OF ACCIDENT (Code most serious)	II-A-3	NUMBER OF FATALITIES	II-B-3
DAMAGE SEVERITY OF ACCIDENT (Code most serious)	II-A-4	NUMBER INJURED	II-B-4
CLASS OF TRAFFICWAY (Code One)	II-A-5	WEATHER (Code One)	II-B-5
ROADWAY RELATED LOCATION (Code One)	II-A-6	ROAD CONDITION (Code Two)	II-B-6
RELATIONSHIP TO JUNCTION (Code One)	II-A-7	LIGHT CONDITION	II-B-7

TRAFFIC CONTROLS II-C-1

DAMAGE TO PROPERTY OTHER THAN VEHICLE

CODE: TYPE II-C-2
SEVERITY
OWNERSHIP

POSTED SPEED II-C-3

CHECK IF REQUESTING ENG. STUDY (Encl. Copies) II-C-4

ACCIDENT DIAGRAM — Indicate North by Arrow III-1-a

III - 1

ACCIDENT DESCRIPTION III-2-a

III- 2

III-2-b

DATE NOTIFIED HOUR | DATE ARRIVED HOUR

III-2-c

III-1-c

RANGE III-1-b TOWNSHIP SECTION III-1-d

Invest. Officer Sig. Badge No Dept Date

DRIVER'S FULL NAME (last) (first) (middle) OR PEDESTRIAN IV-2-a | ADDRESS IV-2-b

IV-2-c OPERATOR LICENSE NUMBER | STATE IV-2-d | OPER CHAUF OTHER IV-2-e | DATE OF BIRTH IV-2-f | Check if driver recommended for re-exam (Use Form DES 1004) IV-2-g

ENFORCEMENT CHARGE (Code No.) ACTION CHARGE (Code No.) IV-2-h | SUMMONS NO. | SUMMONS NO. | CONTRIBUTING CIRCUMSTANCES (Code Up to Five) IV-2-j | DRIVER IV-2-k

IV-3 OR PEDESTRIAN NO

SEAT POS.	OCCUPANTS' NAMES	OCCUPANTS' ADDRESSES	Alc IV-3-b	Age IV-3-c	Sex IV-3-d	Inj IV-3-e
Front Center	IV-3-a					
Front Right						
Rear Left	IV - 3					
Rear Center						
Rear Right						

THIS DRIVER / PEDESTRIAN IV-4-a WAS HEADED N S E W ON Street or Highway

IV-4-b

AND INTENDED TO Code One (DRIVER) Code One (PEDESTRIAN)

VEHICLE NO

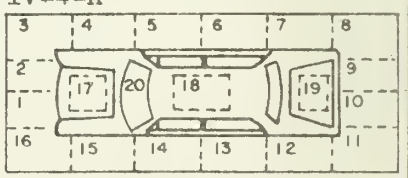
VEHICLE MAKE & MODEL IV-4-c | BODY STYLE IV-4-d | YEAR IV-4-e | IV-4-f

VEHICLE ID NUMBER IV-4-g | LICENSE PLATE NUMBER IV-4-h | STATE IV-4-j | YEAR IV-4-k

OWNER'S NAME AND ADDRESS IV-4-m

VEHICLE DAMAGE SEVERITY

Place (X) in vehicle damage area if damage exceeds $250 IV-4-h



DAMAGE TO VEHICLE (Code One)

Figure 21 Montana Investigator's Accident Report

INDEX

SECTION	SUBJECT	PAGE
I	TIME-LOCATION DATA	1
I - 1	Date of Accident	2
I - 2	Time of Accident	2
I - 3	City	3
I - 4	County	4
I - 5	Accident Number	5
I - 6	Location Designation	6
I - 6 - a	Occurred on	7
I - 6 - b	Intersection	7
I - 6 - c	Miles - direction	7
I - 6 - d	Not at intersection	7
I - 7	Milepost	8
II	ACCIDENT DESCRIPTION DATA	11
II - A - 1	First Harmful Event	11
II - A - 2	First Object Hit	12
II - A - 3	Injury Severity	12
II - A - 4	Damage Severity	12
II - A - 5	Class of Trafficway	12
II - A - 6	Roadway Location	13
II - A - 7	Junction Classification	13
II - B - 1	Number of Vehicles	13
II - B - 2	Number of Pedestrians	13
II - B - 3	Number of Fatalities	14
II - B - 4	Number of Persons Injured	14
II - B - 5	Weather	14
II - B - 6	Road Condition	14
II - B - 7	Light Condition	14
II - C - 1	Traffic Control	15
II - C - 2	Damage to Property	15
II - C - 3	Posted Speed	15
II - C - 4	Engineering Study Request	15
III	ACCIDENT DIAGRAM AND NARRATIVE DESCRIPTION	16
III - 1	Accident Diagram	16
III - 1 - a	North Direction	16
III - 1 - b	Range, Township, Section	16
III - 1 - c	Section sketch	16
III - 1 - d	Collision Type	16
III - 2	Accident Narrative Description	17
III - 2 - a	Analysis	18
III - 2 - b	Time notified -- arrived	19
III - 2 - c	Officer identification, signature	19

INDEX (continued)

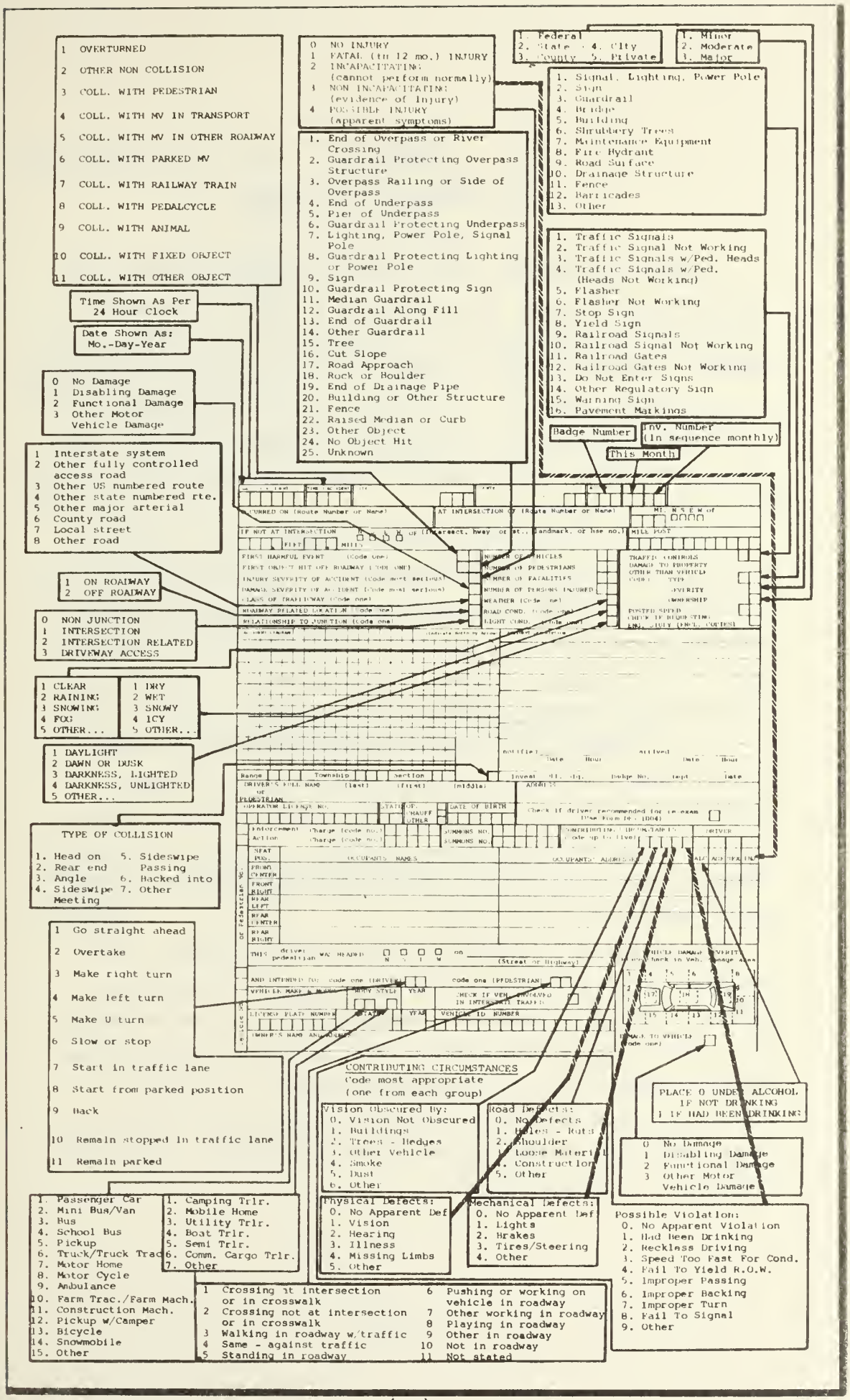
SECTION	SUBJECT	PAGE
IV	VEHICLE OR PEDESTRIAN DATA	20
IV - 1	Vehicle or pedestrian number	21
IV - 2	Driver or pedestrian identification	21
IV - 2 - a	Name	21
IV - 2 - b	Address	22
IV - 2 - c	Driver Operator License Number	22
IV - 2 - d	State of Operator License	22
IV - 2 - e	License Type	23
IV - 2 - f	Driver or pedestrian Date of Birth	23
IV - 2 - g	Re-exam recommendation	23
IV - 2 - h	Enforcement action	23
IV - 2 - j	Contributing circumstances	23
IV - 2 - k	Driver specific information	24
IV - 3	Vehicle Occupants Data	25
IV - 3 - a	Name - address	25
IV - 3 - b	Alcohol status	25
IV - 3 - c	Age	25
IV - 3 - d	Sex	25
IV - 3 - e	Injury status	25
IV - 4	Additional General Information	26
IV - 4 - a	Direction of Travel	26
IV - 4 - b	Intentions prior to accident	26
IV - 4 - c	Vehicle Make - Model	27
IV - 4 - d	Body style	27
IV - 4 - e	Year of manufacture	27
IV - 4 - f	Interstate Traffic Status	28
IV - 4 - g	Vehicle Identification Number	28
IV - 4 - h	Vehicle License Number	28
IV - 4 - j	State of Vehicle License	29
IV - 4 - k	Year of Vehicle License	29
IV - 4 - m	Owner of vehicle, name and address	29
IV - 4 - n	Vehicle Damage Severity	29

NATIONAL SAFETY COUNCIL

"GUIDE TO CLASSIFICATION OF MOTOR VEHICLE TRAFFICWAY ACCIDENTS."

APPENDIX

ENFORCEMENT ACTION CHARGE CODE NUMBERS


1 OVERTURNED
2 OTHER NON COLLISION
3 COLL. WITH PEDESTRIAN
4 COLL. WITH MV IN TRANSPORT
5 COLL. WITH MV IN OTHER ROADWAY
6 COLL. WITH PARKED MV
7 COLL. WITH RAILWAY TRAIN
8 COLL. WITH PEDALCYCLE
9 COLL. WITH ANIMAL
10 COLL. WITH FIXED OBJECT
11 COLL. WITH OTHER OBJECT
0 NO INJURY
1 FATAL (in 12 mo.) INJURY
2 INCAPACITATING (cannot perform normally)
3 NON INCAPACITATING (evidence of injury)
4 POSSIBLE INJURY (apparent symptoms)
1. End of Overpass or River Crossing
2. Guardrail Protecting Overpass Structure
3. Overpass Railing or Side of Overpass
4. End of Underpass
5. Pier of Underpass
6. Guardrail Protecting Underpass
7. Lighting, Power Pole, Signal Pole
8. Guardrail Protecting Lighting or Power Pole
9. Sign
10. Guardrail Protecting Sign
11. Median Guardrail
12. Guardrail Along Fill
13. End of Guardrail
14. Other Guardrail
15. Tree
16. Cut Slope
17. Road Approach
18. Rock or Boulder
19. End of Drainage Pipe
20. Building or Other Structure
21. Fence
22. Raised Median or Curb
23. Other Object
24. No Object Hit
25. Unknown
1. Federal
2. State
3. County
4. City
5. Private
1. Minor
2. Moderate
3. Major
1. Signal, Lighting, Power Pole
2. Sign
3. Guardrail
4. Bridge
5. Building
6. Shrubbery Trees
7. Maintenance Equipment
8. Fire Hydrant
9. Road Surface
10. Drainage Structure
11. Fence
12. Barricades
13. Other
1. Traffic Signals
2. Traffic Signal Not Working
3. Traffic Signals w/Ped. Heads
4. Traffic Signals w/Ped. (Heads Not Working)
5. Flasher
6. Flasher Not Working
7. Stop Sign
8. Yield Sign
9. Railroad Signals
10. Railroad Signal Not Working
11. Railroad Gates
12. Railroad Gates Not Working
13. Do Not Enter Signs
14. Other Regulatory Sign
15. Warning Sign
16. Pavement Markings
Time Shown As Per 24 Hour Clock
Date Shown As: Mo.-Day-Year
0 No Damage
1 Disabling Damage
2 Functional Damage
3 Other Motor Vehicle Damage
Badge Number
Inv. Number (In sequence monthly)
This Month
1 Interstate system
2 Other fully controlled access road
3 Other US numbered route
4 Other state numbered rte.
5 Other major arterial
6 County road
7 Local street
8 Other road
1 ON ROADWAY
2 OFF ROADWAY
0 NON JUNCTION
1 INTERSECTION
2 INTERSECTION RELATED
3 DRIVEWAY ACCESS
1 CLEAR
2 RAINING
3 SNOWING
4 FOG
5 OTHER...
1 DRY
2 WET
3 SNOWY
4 ICY
5 OTHER...
1 DAYLIGHT
2 DAWN OR DUSK
3 DARKNESS, LIGHTED
4 DARKNESS, UNLIGHTED
5 OTHER...
TYPE OF COLLISION
1. Head on
2. Rear end
3. Angle
4. Sideswipe Meeting
5. Sideswipe Passing
6. Backed into
7. Other
1 Go straight ahead
2 Overtake
3 Make right turn
4 Make left turn
5 Make U turn
6 Slow or stop
7 Start in traffic lane
8 Start from parked position
9 Back
10 Remain stopped in traffic lane
11 Remain parked
1. Passenger Car
2. Mini Bus/Van
3. Bus
4. School Bus
5. Pickup
6. Truck/Truck Trac
7. Motor Home
8. Motor Cycle
9. Ambulance
10. Farm Trac./Farm Mach.
11. Construction Mach.
12. Pickup w/Camper
13. Bicycle
14. Snowmobile
15. Other
1. Camping Trlr.
2. Mobile Home
3. Utility Trlr.
4. Boat Trlr.
5. Semi Trlr.
6. Comm. Cargo Trlr.
7. Other
1 Crossing at intersection or in crosswalk
2 Crossing not at intersection or in crosswalk
3 Walking in roadway w/traffic
4 Same - against traffic
5 Standing in roadway
6 Pushing or working on vehicle in roadway
7 Other working in roadway
8 Playing in roadway
9 Other in roadway
10 Not in roadway
11 Not stated
CONTRIBUTING CIRCUMSTANCES
Code most appropriate (one from each group)
Vision Obscured By:
0. Vision Not Obscured
1. Buildings
2. Trees - Hedges
3. Other Vehicle
4. Smoke
5. Dust
6. Other
Road Defects:
0. No Defects
1. Holes - Ruts
2. Shoulder
3. Loose Material
4. Construction
5. Other
Physical Defects:
0. No Apparent Def
1. Vision
2. Hearing
3. Illness
4. Missing Limbs
5. Other
Mechanical Defects:
0. No Apparent Def
1. Lights
2. Brakes
3. Tires/Steering
4. Other
PLACE 0 UNDER ALCOHOL
IF NOT DRINKING
1 IF HAD BEEN DRINKING
0 No Damage
1 Disabling Damage
2 Functional Damage
3 Other Motor Vehicle Damage
Possible Violation:
0. No Apparent Violation
1. Had been Drinking
2. Reckless Driving
3. Speed Too Fast For Cond.
4. Fail To Yield R.O.W.
5. Improper Passing
6. Improper Backing
7. Improper Turn
8. Fail To Signal
9. Other

Appendix B
THE REFERENCE POST SYSTEM

Highway Information System files are organized around the reference post system. This system is a method for uniquely identifying roadway locations (milepoints), and consists of a set of non-uniformly spaced physical reference posts (mileposts) located along roadways. The reference posts, in general, are a mile apart, but may vary considerably from this distance. The first marker of a route is numbered zero, and succeeding markers are numbered sequentially.

In order to uniquely specify a milepoint on a given route, two items are specified: the number of a reference post, and the distance from that reference post to the roadway location. The distance specified is positive if travel from the reference post to the milepoint is toward higher-numbered reference posts, and negative if travel is toward lower-numbered reference posts.

As an example of the use of the reference post system, a point located 0.348 miles beyond reference post 146 toward reference post 147 is specified as milepoint 146+0.348. The point may also be referenced in relation to marker 147. If, for example, markers 146 and 147 are 1.459 miles apart, the point may be specified as 147-1.111.

To determine the distance between two milepoints, it is necessary to establish the location of all of the reference posts on a route by means of a common point. A "true mileage" file locates each reference post with respect to the beginning milepoint (000+0.000) of the route on which it is located.

To complete the key for HIS files, the route system and route number are joined together with the milepoint. The route system is a 1 character code:

THE REFERENCE POST SYSTEM (continued)

I -- Federal Aid Interstate
P -- Federal Aid Primary
S -- Federal Aid Secondary
U -- Federal Aid Urban
L -- Local

The route number is a 5 digit number. The complete key provides unique identification for every roadway location stored in Highway Information System files.

In the case of the Montana Investigator's Accident Report, there is a slight difference, in that the route number is a three digit number.

Following is an example of the HIS KEY and the Accident Report Highway-Milepost for the same highway location which is 0.45 miles beyond reference post 307 toward reference post 308 on Federal Aid Interstate 90.

HIS KEY	I	0	0	0	9	0	3	0	7	+	0	4	5	0

Accident Report Highway Milepost	I	0	9	0	3	0	7	+	0	4	5	0